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COMPARATIVE VIEW

OF

FEVER,

&c.

A COMPARATIVE VIEW OF FEVER, AND INFLAMMATORY COMPLAINTS;

WITH

ESSAYS,

ILLUSTRATIVE OF THE SEAT, NATURE,
AND
ORIGIN OF FEVER.

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DUBLIN:
FOR J. CUMMING, LOWER ORMOND-QUAY; HODGES AND
M'ARTHUR, COLLEGE-GREEN;
AND
LONGMAN, HURST, REES, ORME, AND BROWN, LONDON.
1824.

Ex Libris Bibliothecae
Collegii Regii
Medicorum Edinburg.

Printed at the Hibernia Press Office,
Temple-lane.

R23954

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INTRODUCTION.

In the following pages I have instituted a comparison between Fevers and different inflammatory complaints, from a perusal of which the reader will perceive how closely they are allied, and that the resemblance is striking not merely in their general outline, but in their particular features.

I would fain hope that the new views here taken of Fever, and the various lights in which it is placed, may serve to render our ideas in respect to its nature and mode of treatment clear and satisfactory.

I have likewise given some short detached Essays, the tendency of which is to illustrate a point of practice, or show in what Fever essentially consists.

Further, I beg leave to offer to the Faculty some reasons which have led me to consider Fever not infectious, and the terms infectious and contagious synonimous. These reasons are founded almost solely on my own personal observation and experience; and while I submit them with diffidence to the judgment of the reader, I am ready to acknowledge, that, before I commenced the inquiry, I entertained, from early education and precept, opinions on this head diametrically opposite to those which I now venture to deliver.

I have, moreover, endeavoured to show the circumstances under which blood-letting is likely to prove serviceable or injurious, for I never entertained the opinion that blood-letting was to be employed indiscriminately in Fever.

A
COMPARATIVE VIEW
OF
FEVER,
AND
INFLAMMATORY COMPLAINTS.

A COMPARISON BETWEEN PHRENITIS AND CEPHALIC OR TYPHOUS FEVER.

BETWEEN Phrenitis and Typhus there exists not merely a general resemblance, but so striking a likeness in their particular features, that it is easier to show the points in which they agree than those in which they differ :—for, where shall we find two complaints, supposed different, so much a like? In Phrenitis there is head-ach, flushing of the face, throbbing of the temples, suffusion of the eyes, delirium, prostration of strength, heat of skin, frequency of pulse, thirst, nausea or vomiting, loss of appetite, foulness of the tongue, and a vitiated state of the excretions ; and, when the disease is about to terminate unfavourably, there is stupor, coma, hiccup, subsultus tendinum, difficult deglutition, and a paralysis of the sphincters.

Now is there a single symptom here enumerated that is not found in Typhus?

But we are told that in Phrenitis the head-ach is more acute, the delirium more violent, and the pulse stronger than in Typhus; yet in Typhus acute head-ach, high delirium, and a strong pulse, are not infrequent—further, it is said that the petechial eruption rarely occurs in Phrenitis, but frequently in Typhus;—true, but this is rather to be considered an accidental than a necessary symptom, not indicating any alteration in the mode of treatment, nor any change in the nature of the complaint.

To draw the parallel still closer, we find that the brain in both is the seat of disease; that in both the animal functions are primarily, and the vital and natural, secondarily concerned:—moreover, both disorders are produced by the same causes, intemperance, excessive venery, exposure to cold and wet, anxiety of mind, the stronger passions, the rays of a vertical sun, &c.; with this single exception, that Typhus occasionally rages as an epidemic, and is supposed to be propagated by contagion, whereas Phrenitis is not allowed to be contagious, nor ranked among the Epidemics. On these points, however, a diversity of opinion exists, and some perhaps will go so far as to say, that these distinctions are more imaginary than real,—because the symptoms of Phrenitis pass into and are blended with those of Typhus; and again, Typhus assumes the type of Phrenitis.

In regard to the mode of treatment, sedatives and evacuants are alike called for in both complaints, and must be employed according to the urgency of the symptoms and the strength and age of the patient. When the disease is urgent, our hope rests on these alone; and by these alone, when a cure is impracticable, are we enabled to mitigate the violence of the attack.

Were I now to pursue this parallel still further, in order to show the striking similitude between these two diseases, I would state that in both the same morbid appearances are observed after death:—I would point out the same arteries in a state of excitement, the same veins gorged with blood:—I would say, here is an effusion of serous fluid into the ventricles, between the membranes, and at the base of the brain; and, in some instances, I should be able to detect in the same parts, or in the substance of the brain itself, an effusion of blood occasioned either by rupture or extravasation.*

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* Dr. Hunter, in his Work on the Continued Fever in Leeds, speaking of a plethoric man, æt. 43, who died deli-

I must not here omit to mention, that although debility exists at times in Phrenitis, in so great a degree that the patient is unable to move himself in the bed, yet, arteriotomy and venesection are practised without hesitation and with decided advantage.—And why?—because the debility is indirect, produced by inflammation of the vessels of the brain, and whatever diminishes this inflammation must tend to give strength.

I am persuaded, it is only necessary to exercise our understanding, to look at the phenomena and the effects of the remedies, in short, to have the courage to raise the eye to truth, in order to be convinced that depletion is, for the same reason, as necessary and useful in Typhus.

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rious on the fourteenth day of fever, says, "the brain appeared actually loaded with blood; the vessels of the membranes were distended, as if fully injected." Dr. Matthey, in his Report of a Fever that prevailed at Geneva in 1805, gives the following account of a dissection of a person æt. 52, who died on the sixth day of Fever. "The vessels of the meninges were found strongly infarcted; a bloody, gelatinous fluid was spread over the whole brain; liquid in the ventricles; choroid plexus a deep red. At the posterior part of the lobes, and interiorly, puriform matter without alteration of the texture of the brain; the same at the thalamus nervorum opticorum and extending along these nerves, and an inch into the cavity of the spine;—cerebellum very soft."

A COMPARISON BETWEEN ERYSIPELAS AND TYPHUS.

In an inquiry of this nature, novel, and at first view extraordinary, our business is first to define the two diseases, and then to ascertain their causes and mode of treatment; which being accomplished, the reader will at once see in what they differ or agree, and whether the disagreement be such as to constitute two complaints essentially different.

Erysipelas consists in a heat, redness, swelling, and pain of the skin of some part of the body, attended generally by the following symptoms; a diminution or loss of appetite, nausea, chilliness or shivering, heaviness or pain of the head, fugitive pains in the back, frequency of pulse, heat of skin, thirst, and foulness of the tongue, and these constitute fever, which is high or low as the inflammation is violent or mild. When the disease attacks the face and scalp, it is often accompanied by delirium, suffusion of the eyes, a frequent intermitting pulse, coma, subsultus tendinum, and difficult deglutition, symptoms which not infrequently terminate in death.

The last-mentioned symptoms are observed in the last stage of the worst species of Typhus; they proceed, in cases of Erysipelas, from the spreading of the inflammation from the face and scalp to the internal membranes and substance of the brain,* a circumstance that deserves par-

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* In illustration of this point I have received the following communication from Dr. M'Dowal, an able and ingenious surgeon and anatomist of this city.

Eccles-street, July, 1821.

"My dear Sir,

"According to my promise I now send you an account of the appearances, presented on the examination of two brains, after Idiopathic Erysipelas of the head and face; —the patients both died comatose.

"The scalp was very vascular and tumid; the pericranium crowded with vessels, the vascularity of the bones increased, particularly in the diploë; the separation of the bones from the *dura mater* tore vessels carrying red blood; hence numerous dots all over its surface: the membrane itself appeared as if minutely injected;—there was thickening of the arachnoid and loss of transparency, particularly where it corresponds to the large veins lodged in the sulci between the convolutions of the cerebrum. Serum flowed out on opening the *arachnoid* sac. The *pia mater* presented, in many parts, a bright red colour from the distension of its minute vessels, this was in patches of variable size, in some situations it appeared as if the membrane had been daubed with blood, but, that it was contained in vessels was obvious, from the difficulty of wiping it away with the sponge—where those vascular ticular notice, inasmuch as it shows that when the brain is inflamed the genuine symptoms of Typhus, in all its violence, present themselves. We may further remark, that the same morbid appearances are detected in the brain in Typhus and Erysipelas of the face and scalp; that is, the vessels are inflamed or gorged with blood, there is effusion of a serous fluid between the membranes and into the ventricles, and there is a preternatural degree of vascularity in the substance of the brain.

In Erysipelas, the inflammation, at one time, presents a vesicular eruption containing a watery

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patches were wanting, minute red vessels appeared in great number, but not so crowded together.

"The firmness of the brains was considerably augmented, and the cerebral structure was preternaturally vascular, as seen by its section. The secretion of the lining membrane of the ventricles was increased, though its vascularity was not observable. A gelatinous-like fluid was effused by the pia mater between the convolutions, and covered by the arachnoid; on puncturing the latter, however, it flowed out, being merely serum, though at first appearing like jelly. In fact, all was preternaturally vascular from the skin to the most internal parts of the brain. The intimate connexion between the periosteum and dura mater by vessels going first to the diploë, or, at once, to the latter membrane, is very obvious; hence, injury or disease of the scalp often causes disease of the dura mater, and vice versa."

fluid, and terminating in a desquamation of the cuticle;—at another, it proceeds to suppuration, and occasionally ends in gangrene: these different terminations depend on the seat, extent, and intensity of the inflammation; but, in every instance the fever is secondary, the consequence of the inflammation; for, by reducing the one the other is diminished.

In respect to the local appearances now described, the difference between Typhus and Erysipelas is obvious and striking; but both complaints are produced by exposure to cold and wet, by night-watching, the abuse of spirituous liquors, violent exercise, suppressed evacuations, &c.

When Erysipelas is seated in the face or scalp, and the brain becomes engaged, the danger is great, and sedatives and evacuants should be fully and timely employed;—in such a case, indeed, any delay or hesitation might be attended with fatal consequencces; but, in every instance, no matter where seated, or in whatsoever degree it may exist, aperients, diluents, a cool air, and a low regimen, are required. Typhus, when mild, likewise requires for its cure the same aperients, diluents, and low regimen; but when acute, it demands the prompt and decisive employment of sedatives and evacuants.

The local remedies in Erysipelas are various: at the present day the most approved are fomentations, cooling lotions, and leeches. From what has now been stated with regard to Erysipelas, it appears that the external inflammation causes fever; that the fever is in proportion to the degree of the inflammation, which, when seated in the face and scalp, often extends to the internal portion of the cranium, and then produces Typhus:—this, as I before observed, is a remarkable circumstance, as it shows that inflammation of the brain or its meninges is the cause of Typhous or Brain Fever.

Such a striking resemblance between the two complaints, in this, their most important feature, shows, that both are in their nature essentially inflammatory.

A COMPARISON BETWEEN OPHTHALMIA AND TYPHUS.

When inflammation is seated in any external part or organ, for example, in the eye, it is distinctly seen, and the mode of treatment is at once determined on. In such a case the degree and extent of the local inflammation, and its effects on the general habit, are perceptible; at the same time, the efficacy of the different remedies employed can be readily ascertained.

In Ophthalmia are various symptoms indicative of different degrees of inflammation; as itchiness, soreness, intolerance of light, sense of heat, pain, redness, and swelling; and, if the disease be violent, there is head-ach, languor, chilliness or shivering, restlessness, heat of skin, thirst, frequency of pulse, nausea, and prostration of strength; and the fever so excited is high or low, of long or short duration, according to the intensity and extent of the inflammation.

In these countries Ophthalmia is rarely seen as an epidemic, or considered infectious; but in the East and West-Indies, in Egypt, along the coast of the Mediterranean, and in some of our military hospitals, it has assumed a character of such a nature, as would seem to justify the opinion of those who class it among infectious diseases.

In Ophthalmia, as in Erysipelas, we find fever in different degrees, according to the violence and extent of the inflammation: several of the symptoms are above enumerated, and we find them to be exactly the same as those observed in Typhus; this shows, in a striking manner, the connexion between inflammation and Typhus.

To the spreading of the inflammation from the eye to the brain and its membranes, the typhoid symptoms, which supervene to these diseases, can alone be ascribed. Nothing more is necessary to prove that Typhus, as well as Ophthalmia, is essentially inflammatory. Again, the symptoms proper to Ophthalmia, as, intolerance of light, pains in the eye-balls, suffusion of the eyes, and even loss of vision, occur not infrequently in Typhus: and it is well worthy of our notice, that, whereas, in Ophthalmia the inflammation, spreading from the eye to the brain, produces the symptoms of Typhus; in Typhus, the reverse of this takes place; the affection of the eye proceeds from that of the brain, showing the extension of the inflammation from an internal to an external organ.

We may trace still further the parallel between these complaints when we take a view of the juvantia and lædentia: experience teaches, that aromatics, spirituous liquors, anodynes, camphor, and a full diet, are as injurious as, sedatives, evacuants, a cool air, and diluents, are beneficial. When either is violent, measures the most efficient must be quickly resorted to; when mild, abstinence, diluents, and aperients, are generally sufficient.

Moreover, many of the causes by which they are induced, are the same, viz. heated, close apartments; intoxication; night-watching; anxiety of mind; violent exercise; exposure to cold and wet; excessive venery; blows and falls, and constipation of the bowels.

Such is the comparison I would institute between Ophthalmia and Typhus, diseases which, on a superficial view, appear not merely different, but even opposite, in their characters; yet, when more closely examined, are found to be essentially the same. The resemblance in their leading features is striking; the points of difference are of minor consideration.

A COMPARISON BETWEEN PNEUMONIA AND TYPHUS.

Pneumonia is distinguished by pain, a sense of weight, heat or soreness in some part of the thorax, by dyspnœa, cough and expectoration; there is, moreover, shivering, heat of skin, frequency of pulse, thirst, loss of appetite, indigestion, and prostration of strength: the last-mentioned symptoms constitute what is commonly known by the term Fever. Some affection of the head is usually present; as, pain, stupor, delirium, heaviness or vertigo; and, occasionally, the brain is so much engaged, that the genuine symptoms of Typhus make their appearance. Such is Pneumonia, a disorder uncertain in its duration and mode of termination, and often dangerous, even though not accompanied at the onset by any alarming symptom. When violent, it requires the immediate employment of our most active remedies; as blood-letting, general and topical, cathartics, and blisters: we may mention as auxiliaries, antimonials, diluents, saline medicines, and expectorants. This complaint is frequently produced by intemperance, violent exercise, exposure to cold and wet, suppressed evacuations, &c.

The striking symptoms in the history of Pneumonia are, pain, sense of heat, soreness or weight in one or more parts of the thorax, prostration of strength, cough, dyspnœa, heat of skin, and frequency of pulse. But, of these, the most important in the eye of the practitioner, are, the pain and sense of weight in the chest; for, these being removed, the fever subsides and the strength is restored.

So it is with Typhus, in which, though the prominent symptoms are, pain, sense of weight, heat or tightness in the head, intolerance of light and noise, confusion of ideas, delirium, nausea, loss of appetite, frequency of pulse, heat of skin, and prostration of strength,—yet here the pain and sense of weight in the head command our chief consideration; because, this morbid condition of the brain being removed, the fever subsides, the mind recovers its tone, and the strength is restored: and the most effectual means to relieve this affection of the brain, are the same as are employed for the cure of Pneumonia, viz. evacuants and sedatives. We find, moreover, that in both complaints similar appearances are presented after death. In Pneumonia, for example, we see some vessels preternaturally florid, and others gorged with dark-coloured blood, attended by abscesses, by effusion of purulent or watery fluid, or coagulable lymph;

in Typhus, the vessels in the brain exhibit the same appearance, mostly accompanied by an effusion of an aqueous fluid, sometimes of coagulable lymph. But here we may trace a difference; for, in Typhus, pus is seldom formed, whereas it is a very common consequence of Pneumonia:—this, however, does not arise from any difference in the nature of the two diseases, but in the structure of the organs respectively engaged; the lungs and their containing membranes being more fibrous and more plentifully supplied with blood-vessels than the brain and its membranes.

And to the same source, I mean the difference of the organs and their functions, we may refer the dissimilarity of the phenomena—the cough, dyspnœa, and expectoration, which attend Pneumonia;—the head-ach and disturbance of the animal functions by which Typhus is distinguished.

A COMPARISON BETWEEN ENTERITIS AND TYPHUS.

There is, perhaps, no inflammatory complaint more dangerous than Enteritis, or that proceeds so rapidly to a fatal termination: in a few days, even in a few hours, all hope of recovery may be extinguished.

Its characteristic symptoms are, pain, heat or soreness in one or more portions of the intestines, constipation, vomiting, and a sudden prostration of strength; these are attended by shivering, heat of skin, foulness of the tongue, desire for cold water, nausea, and loss of appetite; there is often slight head-ach, vertigo, and delirium. The state of the pulse is remarkable; most frequently it is low, weak, and compressible, accompanied by collapsed features and oppressed respiration. The characteristic symptoms of Typhus it is unnecessary to repeat; the leading features in both complaints are, pain, heat or soreness, fever, a feeble, frequent pulse, and prostration of strength; in fine, when we compare the symptoms, causes, modes of cure, or appearances after death, in Enteritis and Typhus, we are obliged to confess, that in their nature they are similar; and that any differences which occur are to be accounted for by the different functions and structure of the parts inflamed, the bowels, and the brain.

Here, I wish particularly to call the reader's attention to the weak state of the pulse and the sinking of the vital powers, and to the advantage obtained by blood-letting and evacuants in Enteritis, in order to show that these symptoms depend on inflammation or over-excitement; were it otherwise, it is clear that evacuants and sedatives could not cure the disease. From a parity of reasoning we conclude, that the weakness of the pulse and the sinking of the vital powers in Typhus,* cannot be adduced as an argument against the use of evacuants; but that since we find they produce equally beneficial effects in Typhus as in Enteritis, the symptoms of debility in Typhus must equally depend on inflammation or over-excitement.

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* Dr. Mosely, speaking on the effects of bleeding in the early stages of the West-India Fever, says: "Many practitioners have been deterred from bleeding their patients from the depression of the pulse and from the faintness which sometimes accompany the first onset of this fever; but here the pulse always rises, and the faintness disappears, as the heart is relieved from its oppression by the loss of blood." *See* p. 447, 4th Ed.

A COMPARISON BETWEEN PUERPERAL FEVER AND PERITONITIS, AND BETWEEN PUERPERAL FEVER AND TYPHUS.

When Fever attacks lying-in-women, it is usually called *Puerperal*, because this word implies the state of parturition.

Puerperal Fever assumes two forms, the mild and acute. When mild, there is chilliness, languor, soreness, and pain in the abdomen, augmented by pressure; heaviness, or pain of the head, and confusion of ideas, attended by fugitive pains in the flesh, irregularity of the bowels, loss of appetite, nausea and retching, by thirst, desire for cold drinks, heat of skin, præcordial oppression, depression of spirits, and a frequent pulse, varying in strength and regularity. These symptoms constitute the mild form of Puerperal Fever, which may last ten, twenty, or thirty days; neglected or maltreated, delirium, hiccup, difficult deglutition, involuntary dejections and convulsions, not infrequently supervene. In the acute form the symptoms are violent, and the danger is imminent; in seven or five days it may prove fatal, or, like the Plague, in twenty-four hours; here acute and lancinating pains are felt in the abdomen, (which is tense, distended, and highly sensible to the touch,) accompanied by nausea, vomiting, urgent thirst, and great prostration of strength; the pulse sinks rapidly, though, at times, it is hard and full, the respiration is quick and laborious, the mind is despondent, there is hiccup, delirium, stupor, and coma; in some instances, however, the intellect continues clear and unclouded until a few minutes before the death of the patient.

On examining the post-obit appearances we find that the peritonæum and its doublings, the omentum, mesentery, and mesocolon are thickened, preternaturally vascular, and covered with layers of coagulable lymph; the same appearances are observable in the external covering of the stomach, bowels, and the remaining abdominal viscera; moreover, flakes of coagulable lymph, of a pale yellow or whitish colour, are often found floating in a whey-like fluid in the cavity of the abdomen, and gangrenous spots are often discovered in the membranes of the contained viscera.

We must not omit to notice the uterus, which, occasionally, has a natural appearance, but more frequently is enlarged and highly vascular, and its peritonæal coat is almost uniformly thickened, and covered with minute florid vessels and lymph.

The morbid appearances now mentioned prove the existence of previous inflammation and its consequences in the peritonæum and throughout its foldings, and they are sufficient to account for the phenomena; and the inflammatory nature of the complaint is still more clearly proved by the efficacy of sedatives, evacuants, and counter-irritants; witness, for example, the benefit derived from the application of 50, 100, or 200 leeches to the abdomen, from venesection, from the use of fomentations, blisters, and stimulating liniments, from active aperients, cooling drinks, and the sedative regimen.

Such are the leading features and circumstances of Puerperal Fever, between which and Peritonitis we are now to institute a comparison, and see in what particulars they may agree or disagree one with the other.

Peritonitis exists under two forms, the mild and acute: in the mild form, there is chilliness, languor, pain, sense of heat, or soreness in the abdomen, augmented by pressure, nausea, loss of appetite, a feverish pulse and skin, restlessness, and thirst, accompanied by vitiated secretions, by head-ach, confusion of ideas, and irregularity of the bowels.

Acute Peritonitis is characterized by rigors, by distention, and lancinating pains of the abdomen, which becomes exquisitely sensible to the touch; the pulse is frequent, and varies in strength and regularity; there is retching, vomiting, and an urgent desire for cold drinks; there is head-ach and confusion of ideas, and, when the complaint is about to terminate fatally, we find delirium, hiccup, and subsultus tendinum, accompanied by involuntary dejections and difficult deglutition.

After death the peritonæum exhibits marks of inflammation and its consequences:—we see it thickened and highly vascular or opaque; we find the omentum mesentery, mesocolon, and bowels, in the same state, and every where are discovered flakes of coagulable lymph, several of which are seen floating in a whey-like fluid lodged in the cavity of the abdomen, and gangrenous spots are occasionally found in the membranes of the abdomen or in the covering of the contained viscera.

Such are the principal phenomena and appearances after death in Peritonitis, and these we find to be nearly, if not precisely, similar to those observed in Puerperal Fever: moreover, the two complaints are caused by exposure to cold and wet, by fatigue, anxiety of mind, suppressed perspiration, and constipation of the bowels, and are cured by evacuants,* sedatives, and the tepid bath.

In what then, it may be asked, do they differ; or, is there any difference?—in reply, we are told that Puerperal Fever is a contagious, and Peritonitis a non-contagious complaint; that Puerperal Fever occurs most frequently in lying-in-hospitals, and is proper to women after parturition. Of the contagious nature of this Fever some doubts may be entertained;—the two latter positions, for obvious reasons, we are ready to grant; but these do not prove any real difference between the nature of these complaints, they serve only to show a cause, and a very common cause, of every variety of fever, a vitiated state of the air, which, acting on parts highly excited by the state of parturition, and thus predisposed to be acted on, induces the fever called Puerperal.

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* In the Puerperal Fever which raged in the Lying-in-Hospital, of Dublin, in the year 1819, Dr. Labatt, then Master, was in the habit of applying 50, 60, or 100, leeches to the abdomen, and immediately afterwards a blister, which often checked the progress of the complaint, and saved the life of the patient; in many instances, local, appeared to him, preferable to general blood-letting:—with respect to purgatives as a remedy in Puerperal Fever, it may be useful to know the opinion of the same able and experienced physician, who informs me that, of the different remedies of this class, a mixture of jalap and calomel (ten grains of each) he found to be the most efficacious, and to agree best with the stomach.

For further confirmation of what is here advanced, see the valuable works, lately published, of Drs. Campbell and Mackintosh.

When Fever arises under such circumstances, no matter what type it may assume, it is called contagious, and in lying-in-hospitals it rages sometimes like the Plague.

But, did the same morbid condition of the air exist in close rooms, inhabited by men, women, and children, should we not find some labouring under Typhus or Cephalic Fever; some, under the Gastric or Bilious?—and, of the women in a state of parturition, would not some be found in the fever termed Puerperal?

This is a curious and interesting subject, and one entitled to a serious inquiry. From the present investigation, one point, at least, is clearly proved, viz. that a vitiated or impure air, or what is commonly called contagion, brings on a train of symptoms highly inflammatory.

If, while on this subject, I may be allowed to recal to the recollection of the reader, the symptoms of Typhus, mitior and gravior, and to compare them with the mild and acute forms of Puerperal Fever, we shall find that, though in some points the difference is obvious, yet that in most the likeness is remarkably apparent; in both there is the same frequency and variety of the pulse, the same varying state of the skin, the same chilliness or rigor, attended by lassitude, prostration of strength, lowness of spirits, despondency, nausea, vomiting, head-ach, thirst, restlessness, delirium, foulness of the tongue, and a morbid condition of the excretions.

And when about to terminate fatally, do we not usually find in both complaints, difficult deglutition, irregularity and intermission of the pulse, laborious respiration, subsultus tendinum, hiccup, and involuntary dejections?

But, in Typhus, the animal functions are primarily and seriously affected, because the brain is the seat of fever; whereas in Puerperal Fever, the abdominal functions are immediately and chiefly engaged, because the peritonæum and its doublings are the primary seat of disease. Hence, Typhus is distinguished, from the onset, by confusion of ideas, head-ach, and symptoms indicative of congestion and excitement of the brain; while Puerperal Fever is characterized by pains in the abdomen augmented by pressure;—the fever is usually more violent, it runs its course in a shorter period, and local blood-letting is more useful than in Typhus. These are indeed differences; but, on the other hand, there is a farther resemblance between them in other essential particulars—Puerperal and Typhous Fever are caused by a vitiated air, by suppressed perspiration, exposure to cold and wet, and by night-watching, and both complaints yield to evacuants and sedatives. We may further remark, in order to show how closely they are allied, that in Typhus the appearances in the brain after death are as indicative of the pre-existence of inflammation as those observed in the peritonæum and its foldings are in Puerperal Fever.

A COMPARISON BETWEEN HEPATITIS AND THE FEVER TERMED BILIOUS, OR HEPATIC.

In Bilious Fever we have heat, sense of soreness or fulness in the region of the liver, sometimes with and sometimes without pain; and occasionally it happens, that in the course of the disease, pain, acute or dull, is felt in the region of the liver and in the right shoulder, although there was neither at the onset; there is rigor or chilliness, heat of skin, frequency of pulse, thirst, foulness of the tongue, and prostration of strength: the functions of the brain are disturbed, hence head-ach, stupor, vertigo or delirium:—there is considerable derangement of the stomach and bowels, as flatulence, nausea, loss of appetite, bilious vomiting or diarrhœa, tormina or constipation:—the skin and tunica conjunctiva of the eye are often yellowish or of a deep yellow; the urine is scanty, and commonly deposits a lateritious sediment; the fœces exhibit every variety of colour, orange, yellow, blackish, pale, red, or greenish, and the breathing is often oppressed, accompanied by palpitation of the heart.

Bilious Fever is of uncertain duration: in this climate it is not often fatal, though generally tedious lasting 20, 30, or even 40 days; within the tropics it is more violent and dangerous, there death often occurs on the 7th, 5th, or even the 2nd day of the attack; but in the temperate as well as the torrid zone, an unfavourable issue of the complaint is commonly preceded by the following symptoms: hiccup, coma, difficult deglutition, a feeble intermitting pulse, laborious respiration, swelling and tension of the abdomen, and involuntary dejections; and while a favourable termination is in some instances observed without any critical evacuation, in others it is accompanied by a copious perspiration, a bilious diarrhœa, or by a hemorrhage from the bowels, nostrils, or kidneys.

The morbid appearances after death are various; at one time, one or more abscesses, at another, marks of inflammation and congestion are detected in the liver, or, it is found adhering to the parietes of the abdomen, or, to the adjoining viscera; again, there is effusion of coagulable lymph into the cavity of the abdomen, and occasionally gangrenous spots are found in the liver, alimentary canal, or in some of the doublings of the peritonæum. We have further to remark, that the brain not infrequently exhibits marks of inflammation, congestion, and effusion, similar to those observed in Typhus.

Such are the principal phenomena of Bilious or Hepatic Fever.

In Hepatitis, there is pain, acute or dull, in the region of the liver, increased by pressure, and often attended by a sense of fulness, heat, and weight in the right hypochondre, by pain or numbness in the right arm or shoulder, and by dyspnœa and cough: there is chilliness or rigor, heat of skin, frequency of pulse, prostration of strength, thirst and foulness of the tongue, and often head-ach, confusion of ideas, vertigo or delirium, the skin and tunica conjunctiva of the eye are usually yellowish, in some instances of a deep yellow; there is loss of appetite, often nausea, vomiting, and hiccup; the urine, at one time, is high-coloured; at another, turbid, and deposits a lateritious sediment; the fœces exhibit every variety of colour. In the more violent cases, there is coma, difficult deglutition, tension and swelling of the abdomen, laborious respiration, and involuntary dejections.

Hepatitis, in this country, is commonly a tedious, though not often a fatal complaint. It may continue one, two, four, or even six weeks, according to its seat, extent, violence, and mode of treatment, and, like Bilious Fever, may terminate favourably with or without any critical evacuation; and if the issue be unfavourable, we find that the *post mortem* appearances are exactly similar to those already noticed in our description of that Fever.

When Hepatitis is protracted, we commonly find that the pain diminishes or subsides, and the complaint then assumes the character of Bilious Fever; and, in the course of a tedious Bilious Fever, it is not unusual to witness the development of Hepatitis. These are remarkable circumstances, and well worthy of notice, inasmuch as they show the close alliance that subsists between these two diseases, and that they reciprocally pass one into the other.

From the history now given of the two complaints, it appears that the principal symptoms are the same in both. We may, however, trace a difference, if not in kind, at least in degree, and in the order of their appearance;—in Hepatitis, for example, the pain in the region of the liver, at the onset, is more acute, the breathing more oppressed, and the pulse stronger, than at the onset of Bilious Fever: Hepatitis, too, is commonly considered more rapid in its course and more violent in its symptoms.—In Bilious Fever, on the contrary, the stomach and head are generally more affected at the commencement of the attack, than in Hepatitis; but in both complaints, as they advance, the resemblance is more striking, for the head usually becomes so engaged, that the genuine symptoms of Typhous, or Brain Fever, then present themselves. The differences just mentioned we may ascribe to the seat of the affection (for example, it may be the convex or concave portion of the liver) and to the extent and degree of excitement in the vessels particularly engaged.

Within the Tropics, where these diseases exist in all their violence, the liver is rarely, if ever, the only organ concerned; the stomach, bowels, and peritonæum generally exhibit marks of inflammation and its consequences, and the brain is usually affected in a similar manner.*

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* Dr. Chisholm, in his treatise on Tropical Climates, speaking of the Remittent Yellow Fever, says :—" The organ principally affected was the liver, and, it is not a little singular, that in those cases of the worst kind of this fever that terminated fatally, this viscus was found either in a loose, dissolved, putrid state, or sphacelated, and having the consistence, the feel, and the colour of rotten cork; or full of abscesses :—in such cases, too, the biliary ducts were rendered impervious by stricture :—in many cases several portions of the intestinal canal were inflamed, especially the duodenum, and, here and there, evident marks of gangrene were observable."—*See* MEDICO-CHIRURGICAL REVIEW, *and* JOURNAL OF MEDICAL SCIENCE, *for June*, 1822.

The most common causes of both complaints are intemperance, a heated or vitiated atmosphere, violent exercise, suppressed evacuations, exposure to cold and wet, constipation, and anxiety of mind; and the most efficient remedies for the cure of both, when violent, are blood-letting, general and topical, aperients, diluents, blisters, mercury, antimonials, and the tepid bath: but when either appears in a mild form, more active measures may be dispensed with; and we shall generally find that a strict abstinence from all kinds of stimulating food and drink, laxatives, simple saline medicines, and cooling drinks, will answer the expectations of the practitioner.

A COMPARISON BETWEEN GASTRITIS AND GASTRIC FEVER.

The diagnostic symptoms of Gastritis are well known and readily ascertained. Pain, or a sensation of burning heat in the stomach, augmented by pressure, and accompanied by nausea, vomiting, and loss of appetite, by an urgent desire for cold water, by chilliness or rigor, followed by heat and dryness of the skin, and by a pulse sometimes strong, sometimes weak, constitute the complaint called Gastritis. The mind is commonly much depressed, the præcordial anxiety is remarkable, and the head is always affected, but rather with a sense of uneasiness or fulness than of pain.

If we compare these symptoms with those of Gastric Fever, we shall find many points of agreement. The stomach, in both, is the seat of disease; and the fever in both is secondary, depending on the morbid actions in this organ; but, in Gastric Fever, the pain, at the onset, is not so acute, the sense of burning heat is less urgent, and the desire for cold drinks not so great: we may also observe, that there is not the same constant rejection of every kind of food and drink:—further, Gastritis is more dangerous and more rapid in its course than Gastric Fever, and is accompanied with a greater depression of the animal functions.

In these particulars a difference exists, but in degree only; for the same symptoms occur in both disorders, and after death we find in both the same appearances of inflammation and its consequences, in the membranes of the stomach.* Among the many causes to which the two complaints are attributable, we may reckon acrid drinks and poisons, spirituous liquors, repletion, violent exercise, exposure to wet and cold, falls and blows, and food of an indigestible nature.

As Gastritis is in general the more violent disease, it demands the more prompt and decided employment of the most active remedies; still, however, the same remedies are equally applicable to the two complaints,—viz. blood-letting general and topical, blistering, aperients, fomentations, and the tepid bath. In these diseases I can speak from experience of the benefit that results from the application of leeches, in large numbers, to the region of the stomach. The application of forty or fifty leeches, followed by a blister, is a mode of practice which often succeeds in removing or breaking, in the course of twenty-four hours, the violence of the complaint, but general blood-letting should be first premised.

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* Dr. St. Firth, in his Dissertation on the Malignant Fever, (Philadelphia, 1804,) says, "The stomach was always diseased; great inflammation observable throughout; erosions of the villous coat frequent,—in a number of cases detached pieces, as large as a dollar, floating in the black vomit; blood-vessels very much distended; inflammation extended to the intestines."

In some instances I have witnessed the best effects to follow the use of calomel and the watery extract of opium, a combination which seems to allay the irritability of the stomach, and check the disposition to vomiting; perhaps it may also tend to equalize the circulation, and determine to the surface.

Gastritis is universally acknowledged to be an inflammatory complaint, whereas Gastric Fever is considered a disease of debility, because the symptoms are less urgent, the pulse usually more feeble and compressible, and because it is attended with great prostration of strength. But the pulse, in Gastritis, is likewise often weak and compressible, and the debility as great as in Gastric Fever: in both, however, it should be remembered, that the debility is *indirect,* the consequence of over-excitement. Now, as in so many and essential particulars the agreement is obvious, it follows that Gastritis and Gastric Fever are not essentially different.

A COMPARISON BETWEEN SMALL-POX AND TYPHUS.

Small-pox is a cutaneous disease, and evidently inflammatory, for the fever and eruption are in proportion to the degree of inflammation of the skin ; and sedatives, by reducing the inflammation, diminish the fever and the quantity of the eruption.

Not very many years ago Small-pox was considered a malady to which all must submit; and, in the opinion of several, a copious pustular eruption was favourable to the constitution, inasmuch as it was thus freed from foul peccant humours. These ideas were so prevalent, and so strongly implanted in the mind, that those who in early life had not had this disease, entertained serious apprehensions for the future.

But inoculation first rendered the Small-pox harmless ; vaccination has now nearly superseded it ; and, if proper measures be adopted, there is reason to hope that in half a century Small-pox will be known only by name. Why may not the same occur with respect to measles? May we not yet discover some counter-irritant that may render the body as unsusceptible of the contagion of Measles as of Small-pox?

To return from this short digression, I would remark that the symptoms of Small-pox are languor, lassitude, diminished appetite, restlessness, chilliness, uneasiness or pain in the head, prostration of strength, frequency of pulse, thirst, foul tongue, vitiated secretions, heat and redness of the skin, and an eruption which after a few days becomes pustular.

It is by the pustular eruption of the skin that the disease is characterized. The fever is secondary, because in the inoculated Small-pox no indisposition is observed until the arm inflames; then the patient complains, and fever follows, which is high or low according to the degree of excitement in the skin, and the quantity of the eruption.

The power of inoculation and vaccination in producing fever may be exemplified by the effects of superficial inflammation in different parts, viz. in whitlow, in bubo, or in common abscesses. In all these cases fever is the consequence of inflammation, and is high or low in proportion to its degree and extent.

In the natural Small-pox, especially when violent or confluent, the fever clearly depends on the inflammation of the skin; and, what is remarkable, the fever assumes different types according to the degree of the inflammation, and the quantity of the eruption.

Small-pox is a contagious disease; when violent, or improperly treated, it is often fatal; and then we find most of the following symptoms,—stupor, coma, delirium, petechiæ, subsultus tendinum, difficult deglutition, involuntary dejections, &c. These symptoms are indicative of excitement and congestion of the brain, in which organ, after death, we find an effusion of blood, or aqueous fluid, and evident marks of venous turgescence and arterial action.

If we now compare the symptoms of Small-pox, in its mild and violent forms, with those of Typhus mitior and gravior, we may perceive a striking resemblance; and this resemblance is not less striking in the appearances detected in the brain after death in both complaints. We may also remark, that Small-pox and Typhus are, in their nature, inflammatory, because the most effectual remedies are sedatives and evacuants, and further, that the fever in both is secondary.

In these essential particulars the resemblance between the two diseases is obvious; still, however, in some points we may trace a difference. Small-pox, for example, is a contagious disease, and may be re-produced by inoculation; whereas I shall endeavour to show that Typhus is not contagious, nor does it produce any matter by which it can be propagated:—moreover, Small-pox is seated in the skin, and is accompanied by a pustular eruption, whereas Typhus has its seat in the brain, and, when accompanied by an eruption, it is not of the pustular kind. From the parallel now drawn it appears that these two diseases, apparently so different, are yet similar in their nature; and when the respective functions of the skin and brain are considered, the difference in the phenomena will readily be accounted for.

While speaking of Small-pox, it may not be irrelevant to remark, that a few pustules on the face, or any other part of the body, are sufficient to characterize the disease; and in cases of inoculation, a redness and swelling in the arm, surrounded by a few specks, have served to protect the body from any subsequent attack. This shows that a copious pustular eruption is not necessary to the existence of Small-pox, nor to the well-being of the constitution; and as the effect produced by the sedative plan is to allay cutaneous inflammation, and thus diminish the quantity of the eruption, this proves that the quantity of the eruption depends on the degree and extent of the inflammation of the skin. Nor will it appear surprising that Typhous or Brain Fever, in all its malignity, should be induced by Small-pox in a violent form, in consequence of the inflammation spreading from the integuments of the head to the brain and its meninges; moreover, the mass of purulent matter by which the skin is covered must obstruct every pore, and act as a powerful stimulus to the whole vascular system: hence some degree of congestion and excitement must take place in every organ, but in a still greater degree in one previously diseased. If every viscus be equally sound, the brain will suffer most, because this, properly speaking, is the sympathetic organ; and as it is the source and fountain of all sensation and muscular motion, we can readily conceive how much it will be affected by the application of a stimulus so powerful and general as the confluent Small-pox.

A COMPARISON BETWEEN A TUBERCULOUS STATE OF THE LIVER AND THE FEVER CALLED INTERMITTENT.

When the liver is tuberculated we find frequent shiverings followed by heats and sweats. The shiverings vary considerably in degree, from a violent fit affecting the whole, to a sense of coldness or creeping in merely a part of the body. There is also a great variety in respect to the degree of heat of the skin, and the kind, degree, and extent of the perspiration. A considerable variety is also observable as to the duration of the paroxysms, and the time of their approach; sometimes, for example, the shivering comes on once daily, in the morning, at mid-day, or in the evening; sometimes twice, at irregular periods; and sometimes only every second, third, or fourth day. At one time it is followed by heat; at another, by perspiration. On some occasions the heat and perspiration are equable and general; on others, irregular and partial. Such is the irregular character of the fever which accompanies the Tuberculated Liver.

In the *Quotidian Intermittent* the shivering comes on once or twice a-day, and is followed by heat and perspiration; but the same irregularity is here observable as in the tuberculous state of the liver just mentioned, not only in respect to the degree and duration of the paroxysms, and the period of their return, but the equable and general, or partial and unequal heat and perspiration. So far it appears that the febrile paroxysms, by which the Quotidian Intermittent is characterized, are similar to those which characterize the Tuberculous Liver.

There are other circumstances common to both diseases, which mark a strong resemblance in their seat and character; as pain or a sense of heat, soreness, weight or fulness in both the hypochondria, a sallow or jaundiced complexion, a yellowness of the tongue, a diminution of appetite, an irregular state of the bowels, lateritious urine, fœces indicative of a morbid secretion of bile, frequency of pulse, præcordial oppression, pain, vertigo or sense of fulness in the head, hæmorrhoids, and occasionally hæmorrhage from the nostrils or bowels.

In both complaints the violence of the paroxysms depends on the site, degree, and extent of the morbid actions in the liver: on the decline of these morbid actions the paroxysms gradually decline, and with their removal health is restored.

We shall further remark, that on examining the bodies of those who have died of the Tuberculated Liver, tumours of different sizes and colours are found in this organ, some in a latent, some in an inflammatory, and some in a suppurative state; there is also a great variety in the consistence, colour, and nature of the matter contained in these tumours. The same, or nearly similar appearances are discoverable in the liver of those who die of Intermittent Fever, whether of the Quotidian, Tertian, or Quartan type; and, what is remarkable, the spleen in both diseases is commonly found enlarged and hardened, and studded internally and externally with minute tubercles.

In many respects then it appears the resemblance is striking; still, however, a difference may be traced in the appearance of the matter contained; for, in the diseased liver of those who have laboured under Intermittents, the abscesses are, for the most part, of a purulent nature, whereas in the Tuberculated Liver they often contain a cheesy, curdy, or what is usually denominated scrofulous, matter; and the interstices between these scrofulous tumours are more of a schirrous character. We may also trace a difference in regard to the degree of the paroxysms, which are generally more violent in Intermittent Fever than in the Tuberculous Liver: moreover, when we take a view of the causes, we find that Intermittent Fever is more frequently induced by marsh effluvia. Perhaps it may be proper further to remark, that although a diseased state of the spleen is common to both complaints, yet it is much more frequently found enlarged and hardened in Intermittents.

ARE THE DIVISIONS OF FEVER INTO THE CONTINUED, REMITTENT, AND INTERMITTENT, WELL-FOUNDED ?

Authors and practitioners speak familiarly of *Intermittent* Fevers, and they denominate them Quotidian, Tertian, and Quartan, attributing to each of these, several varieties and modifications : —they also speak of *Remittent* Fever with its grades and varieties.

By Intermittent Fever we are taught to understand a disease which comes on by paroxysms, during the intervals between which the febrile symptoms intermit, that is, cease altogether:—but may we not ask, if fever ceases, and then returns after an interval of one, two, or three days, whither does it go, and whence return? Can fever be absent and present at one and the same time? In truth, in the fever called Intermittent, fever never intermits or ceases. There is, indeed, a remission or cessation of the violence of the paroxysms, but no more ; for let us examine the patient and we shall find, that after the termination of the paroxysm there remains one or more of the following symptoms : a frequency of pulse, heat of skin, thirst, foulness of the tongue, a vitiated state of the excretions, disturbed rest, bad appetite, præcordial oppression.

By Remittent Fever is understood a fever that remits only, or is at one time more violent than at another, but which never completely subsides until it comes to a crisis: now this remission is observable in every variety of fever, whether denominated Remittent, Intermittent, or Continued. I say, even in the continued form of fever these remissions are obvious, more especially in the fever called Hepatic or Bilious; but neither in this, nor in any other variety of fever, do these remissions, whether obscurely or distinctly marked, constitute a peculiar disease,* in any wise requiring a distinct or peculiar mode of treatment; they are no more than modifications of fever, depending on the degree and extent of the morbid actions of the organ or part in which it may be seated.*

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* To show the similarity of Ague and Continued Fever, the following observation is quoted from Dr. Lind, p. 321: "In low, fenny countries, agues frequently make their attack during the autumn, under the form of a Continued Remitting Fever, attended with violent symptoms, especially a delirium, whence that state is commonly denominated a Phrenzy Fever." Again, speaking of the diseases of Bengal, he says: "The distempers are fevers of the Remitting or Intermitting kind; sometimes they may begin under a Continued form, and remain several days without any perceptible remission, but they have in general a great tendency to a remission."

To show the transition of Intermittent Fever into the Continued, see Dr. Mosely on Tropical Diseases, &c.—4th edit. p. 194.

To show the similarity of Fevers, I quote the following passage from Dr. Mosely, p. 195: "In hot, marshy, low situations, autumnal Intermittents have generally a putrid tendency, and sometimes, after a few paroxysms, degenerate into irregular, low fevers, accompanied by cold colliquative sweats and diarrhœas."

* I have given my opinions on this subject much more fully from p. 212 to 216, in my "Essay on the Utility of Blood-letting in Fever," published in the year 1813, in which I have maintained,—

1st, That there is no essential difference between Continued and Intermittent Fever.

2ndly, That in the Fever called Intermittent there is properly no intermission, but a remission only.

3rdly, That both in the Intermittent and Continued Fevers there are exacerbations and remissions.

4thly, That these fevers pass into one another.

5thly, That the progress and termination of the disease, and the symptoms which prognosticate a favourable or unfavourable issue, are the same in both.

6thly, That the remedies are also the same.

7thly, That the causes producing Intermittent and Continued Fevers are the same.

CASES ILLUSTRATIVE OF THE ABOVE REMARKS ON THE DIVISIONS OF FEVER.

AUGUST 3, 1821. James Boyce, æt. 42, a farmer, robust and laborious, has been much exposed to the marsh effluvia in the neighbourhood of Baldoyle and Malahide. During the last fortnight and upwards has complained of frequent shivering fits, followed by heat of skin and perspiration, by nausea, vomiting, thirst, head-ach, loss of appetite, and prostration of strength. The paroxysms come on every second or third day, and sometimes every day; their violence and duration are equally uncertain; the cold fits may last one, two, or three hours—(the same irregularity is observable with respect to the hot and sweating fits); the complexion is jaundiced; the fœces are dark-coloured or greyish; the urine is pale, yellow, or lateritious; the tongue foul; the taste vitiated, and the sleep unrefreshing; fugitive pains are felt in both hypochondres; on examination the left lobe of the liver and the spleen are found enlarged and painful to the touch; pulse 116, strong; head-ach; skin hot and dry.*

V. S. ℥x. Pil. ex p. antimon. pil. hydrarg. et ex. col. c.

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* Celsus, in the treatment of the Semi-tertian, recommends blood-letting "nisi magnoperè aliqua res prohibet, inter initia sanguis mitti debet."

August 4th. Relieved by the bleeding; blood buffed and dense; fœces tar-coloured; urine turbid; pain and heaviness of the head; pulse 112, strong; skin hot; tongue foul and yellowish; no appetite: thirst; restlessness; no fit for the last thirty-six hours; much uneasiness in the epigastrium.

Hirud. xv. regioni epigast.
Cr. pil.—haust. cath. p. r. n.

August 5th. This morning, about eight o'clock A. M. a cold fit commenced, which continued more than two hours; this was followed by a hot fit of about three hours' duration, which terminated in perspiration of between three and four hours' continuance; pulse 96; skin moist and warm; thirst; foulness of the tongue; sense of weight and uneasiness in the head; pain on pressing the epigastrium; fœces tar-coloured; urine lateritious.

Hirud. xii temporibus.
Vesicat. regioni epigastricæ.
Cr. pil. et h. cath.

August 6th. This day, about 12 o'clock, the usual paroxysm came on, but it was shorter and less violent than that of yesterday; pulse 92; skin hot and moist; sense of weight or fulness of the head; fœces not so dark; urine lateritious; pain and sense of heat in the epigastrium abated.

Vesicat. nuchæ.
Cr. pil. hydrarg. et h. cath.

August 7th. Head relieved; bowels open; fœces yellowish; urine turbid; pulse 90; skin cool; tongue foul; thirst; no appetite; no fit.

Cr. pil. et h. cath.

August 8th. Febrile paroxysm came on this morning at 9 o'clock A. M.: it was shorter and less violent than the last; pulse 108; skin hot and moist; flushing of the face; fœces yellowish; urine turbid; less uneasiness on pressing the epigastrium.

August 9th. Slight chilliness only came on this day about 12 o'clock, followed by a moderate degree of heat and by gentle perspiration; pulse 112; head-ach; thirst; restlessness.

Cr. pil. et h. cath.

August 10th. Febrile paroxysm this day about 2 o'clock P. M. but so slight as to be scarcely perceptible; head-ach and other symptoms nearly as yesterday.

Cr. pil. et h. cath.

August 11th. At 8 o'clock A. M. a sense of creeping or chilliness was felt about half an hour; this was followed by heat of the body and perspiration; thirst; restlessness; fœces yellowish; urine turbid; pulse 104; distressing head-ach.

V. S. ℥x.—Vesicat. nuchæ.—Mist. sal.

August 12th. Head-ach relieved by the bleeding; blood buffed and sizy; pulse 92; skin hot; bowels free; no return of shivering or chilliness; low delirium; flushing of the face; throbbing of the temples.

Hirud. xii. temporibus—mist. cath.

August 13th. Chilliness, or a sense of creeping in the back, was again felt for a few minutes this morning; skin hot and moist; pulse 90; tongue of a whitish brown; temporary ease from the application of the leeches; complains of a sense of weight and fulness in the occiput.

Hirud. xvi. pone aures.
M. cath.

August 14th. Head relieved; fever abated; no return of the febrile paroxysm; pulse 84.

M. cath.

August 15th. Return of head-ach and fever; præcordial oppression.

Detrahantur ex arteria temporali sanguinis ℥x.—M. cath.
En. Purg.

August 16th. Head-ach considerably relieved; pulse 82; skin cool; three dejections, yellowish; urine turbid.

Cr. m. cath.

August 18th. Head-ach and fever gradually subsiding.

M. cath.

August 21st. Convalescent.

COMMENTARY.

Continued Fever, in this instance, succeeded to the fever styled Intermittent; but there was no metastasis nor translation of disease, nor did the Intermittent degenerate or pass into the Continued: they were distinct and independent diseases. When the Intermittent was cured, the Continued presented itself: the former was seated in the liver and spleen, the latter in the brain. In both cases the morbid actions were the same, differing only in their seats and in degree; they were likewise simultaneous, but those of the liver were the more urgent, and, consequently, gave rise to symptoms so violent, as to command almost the whole attention of the patient and the practitioner. On inquiry, however, it appeared that after the termination of the paroxysms, there remained head-ach accompanied by a frequent pulse and a hot skin, by thirst, loss of appetite and foulness of the tongue, symptoms which proved that fever was still present, and that a diseased action, though in a low degree, was going on in the brain: this was increased by the obstruction and excitement that existed in the liver and spleen; for, an impeded circulation in the abdominal viscera necessarily gives rise to a congestion of blood in the vessels of the brain.

CASE II.

August 26th, 1819. James Gorman, æt. 45, a weaver, Malahide, four days ago was seized with shivering, pains of the back and loins, and vomiting of a bitter fluid, yellow and green: these symptoms were followed by loss of appetite, a foul tongue, thirst, retching, frequency of pulse, and heat of skin. Emetics and aperients have been administered.—Pulse 116, strong; skin hot, dry, and slightly jaundiced; tongue furred; urine lateritious; fœces greenish and slimy; pain in the right hypochondre, augmented by pressure; pains in both shoulders.

Cucurb. cruentæ hyp. dextro.
Pil. hydrarg. cum aloë h. s.
H. cath. cras manè.

August 27th. Temporary ease procured by the cupping; about twelve ounces of blood were abstracted; four dejections, dark-coloured; urine lateritious; pulse 120, strong and tense; skin hot and dry; acute pain in the region of the liver and in the right shoulder.*

V. S. ℥xii.
Repr. pil. et h. cath.

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* Willis employed blood-letting, with decided advantage, in the cure of Intermittents—De Febribus.

August 28th. Blood buffed and sizy; considerable relief obtained by the bleeding; three dejections, greenish and dark; pulse 110; slight perspiration; at times chilliness or creeping.

Cr. pil. et h. cath.

August 29th. Sense of soreness and heat in the region of the liver; a shivering fit came on this morning, followed by heat and perspiration; præcordial oppression; high fever; slight head-ach.

℞. Pil. hydrargyri gr. v.
P. Jacobi gr. iii. m. ft. pil. duæ omni nocte sumendæ.
H. cath. omni manè.
Vesicat. hyp. dextro.

August 30th. Pain in the head and in the region of the liver relieved.

September 1st. The skin is usually hot and moist, but occasionally shivering or chilliness is felt, followed by heat and perspiration. These attacks come on once or twice daily; pulse 102; fœces tar-like; urine turbid; sense of heat and soreness in both the hypochondria.

Cr. pil. et h. cath.

September 3rd. Yesterday, about 10 o'clock A. M. a violent shivering fit came on, and lasted an hour: this was followed by a hot and sweating fit, each of nearly two hours' duration. Pain, or a burning heat, is complained of in the right hypochondre; pulse 104; skin hot and moist; tongue foul and yellow; præcordial oppression.

Cucurb. cruentæ hyp. dextro.
Pil. ex opio, pulvere Jacobi et cal. omni nocte.
H. cath. omni manè.

September 5th. Yesterday, about 12 o'clock, a paroxysm came on similar to that described on the 3rd inst., but not so violent, nor of such long duration; pulse 100; skin hot and moist; thirst: restlessness; desire for cold drinks; fœces rather pale or greyish; urine lateritious; a painful heat is still felt in the region of the liver.

Vesicat. hyp. dext.
Cr. pil. ex opio. &c.

September 7th. To-day, at one o'clock P. M., there was a violent fit of shivering, which lasted half an hour; to this succeeded a hot and sweating fit, which lasted about two hours; pulse 104, strong; tongue furred; fœces orange-coloured; urine cloudy; eye and skin of a jaundiced hue; gums spongy; considerable heat and uneasiness in both hypochondria.

Cucurb. cruentæ hyp. dext. et sinistro.
Hab'. pil. ex opio, &c. ter quotidie.

September 10th. No return of the paroxysm; pulse 92; skin cooler; slight ptyalism; fœces of a light yellow; urine lateritious.

Cr. pil.

September 13th. This day, at 3 o'clock P. M., a paroxysm came on, which lasted nearly three hours; pulse 88; skin cool; bowels opened by the cathartic.

Cr. pil.

September 17th. Yesterday a slight paroxysm, of about one hour's continuance; fever abated; painful sensations in both the hypochondria daily diminishing; ptyalism.

Omittr. cal.
Cr. pil. ex opio et p. Jacobi.

September 19th. No paroxysm, but fever is still present, attended by shooting pains in both the hypochondria.

Cucurb. cruentæ, hyp. dextro et sinistro.

September 20th. Ten ounces of blood abstracted by the cupping instrument; considerable relief followed; bowels open; some return of appetite.

Cr. pil.

September 21st. Fever abated; pulse 82; skin moist.

Cr. pil.

September 23rd. No return of the paroxysm since the 16th inst.; pulse 78; skin cool.

Cr. pil.

September 28th. Convalescent.

COMMENTARY.

During the first eight or ten days of this patient's illness, he laboured under the ordinary symptoms of Hepatic or Bilious Fever; then the Fever called *Intermittent* presented itself at irregular periods, and in different degrees of violence, for the space of a fortnight: after which the complaint resumed its original continued type, and lasted until the 27th September, when the patient was declared convalescent.

From the beginning to the end of this attack, fever, as appears from the history of the case, was never absent; and so variable was its character, that it not only assumed the Intermittent and

Continued, but also the Remittent type: in truth, the symptoms, throughout the entire of the illness, were the same, differing only in degree, and all yielding to the same remedies.

It is remarkable, that while the fever existed, pain, heat, soreness or uneasiness, was complained of in the region of the liver and spleen; when these organs were most affected, the fever was most violent; when relieved, the fever abated; and when cured, fever subsided: in these organs therefore, but chiefly in the liver, I consider the fever to have been seated. In further proof of the derangement of the biliary functions may be adduced the jaundiced colour of the eye and skin, and the appearance of the tongue and excretions. In the treatment the most active anti-inflammatory medicines were employed; as blood-letting general and topical, aperients, mercury, blisters, opium, and antimony.

In cases like the present, after depletion, calomel, opium, and antimony, stand pre-eminent in the list of our remedies. To produce the desired effect, they should be repeatedly administered in small doses; from one to four grains of opium, from two to ten grains of calomel, and from two to twenty grains of James's, or antimonial powder, may be taken in the twenty-four hours. If ptyalism come on, or if, for other reasons, it is considered unadvisable to continue the use of mercury, I have sometimes observed the same, or nearly an equal degree of benefit, to follow the exhibition of opium and antimony. While speaking of opium, I beg leave to remark that the preparation called the Watery Extract is preferable to every other with which I am acquainted.

CASE III.

August 2nd, 1820. William Richardson, æt. 42, a farmer, near Baldoyle, during the last fortnight has been attacked with repeated shiverings, followed by heat of the body and perspiration. These attacks come on every second or third day, and sometimes every day: in the intervals he complains of languor, lassitude on slight exercise, a diminution of appetite, thirst, and restlessness; the bowels are constipated; the tongue is foul and yellowish; the pulse 104; the complexion jaundiced: pain or soreness is felt in both the hypochondria, augmented by pressure.

V. S. ℥x.—Pil. hyd. gr. x. h. s.
H. cath. cras manè.

August 3rd. Blood buffed; serum yellow, and in small quantity; relieved by the bleeding; fœces slate-coloured; urine lateritious; pulse 108; skin hot; tongue foul; thirst; pain on pressing the right hypochondre.

Cucurbitulæ cruentæ hyp. dext.
Rep. pil. hyd. et h. cath.

August 4th. Yesterday, at 2 o'clock P. M., a shivering fit came on of about two hours' duration; the hot continued from three to four, and the sweating fit from five to six hours; disturbed night; thirst; tongue foul and yellowish; pulse 102; pain in the right hypochondre relieved. Twelve ounces of blood were abstracted by the cupping; considerable soreness is felt in the region of the spleen on pressure; fœces of a whitish brown; urine turbid.

Cucurb. cruentæ hyp. sinistro.
Rep. pil. et h. cath.

August 6th. Yesterday there was no fit, but a low degree of fever was still present. This day, about 12 o'clock, the usual paroxysm came on, but it was less violent, and of shorter duration, than the former: pain on pressing the right hypochondre.

Vesicat. hypochond. dextro.
R. pil. hydrargyri ʒss.
Pulv. Jacobi gr. xv. m. f^{t}. pil. xii. Sum^{ii}. ii. 4tis horis.

August 8th. Pain on pressing the right hypochondre much diminished; no fit; fœces tar-coloured; urine turbid.

Cr. pil.
Hab. h. cath.

August 9th. No return of the fit; low, irregular fever; pain, heat, or soreness, occasionally in the region of the spleen and liver; skin of a greenish yellow hue.

Cucurb. cruentæ partibus affectis.
Cr. pil. et h. cath.

August 11th. Yesterday, owing to exposure to a current of cold air, there was a return of the paroxysm in a slight degree: it began about 3 o'clock, P. M., and ended at 6 o'clock, P. M.—fœces greenish; urine lateritious; pulse 102; skin hot and moist. Fourteen ounces of blood were abstracted by the cupping instrument; pains and heat in the hypochondria considerably diminished.

Hab. pil. ex opio cal. et pulvere Jacobi.
H. cath. p. r. n.

August 13th. No return of the paroxysm; low, irregular fever continues; soreness, or sense of burning, is occasionally felt in the right lobe of the liver.

Vesicat. hyp. dextro.
Cr. pil. ex opio, &c.

August 16th. No paroxysm, but there is felt occasionally a sense of chilliness internally, or of creeping in the back and extremities; pulse 108;

skin hot and dry; tongue furred; fœces dark; urine lateritious; pain in the right hypochondre.

Cucurb. cruentæ hyp. dextro.
Cr. pil. et h. cath.

August 17th. Considerable relief was obtained by the abstraction of blood to the amount of ten ounces; fever continues; no paroxysm.

August 20th. Ptyalism; no paroxysm; fever gradually subsiding; skin of a more natural appearance; fœces yellowish.

Omit. cal.
Hab. pil. ex opio et pulvere Jacobi.

August 22nd. No pain, but at times a sense of heat or soreness is felt in the hypochondria; fever diminishes.

Cr. pil. et h. cath.

August 26. Convalescent.

COMMENTARY.

In this instance the fever called *Intermittent* terminated in the *Continued;*[*] the former was of somewhat more than three weeks' duration, the latter of about 15 days:—I say, *called* Intermittent, for, properly speaking, no intermission took place in the intervals of the paroxysms; the pulse was frequent; the skin hot; the tongue foul; and these symptoms were accompanied by restlessness, thirst, and loss of appetite.

The complaint was seated in the liver and spleen: these organs were enlarged, and highly excited; while their disordered actions were violent, the paroxysms were violent; when moderate, the fever was moderate. Still, however, there were in this, as there are in every variety of fever, exacerbations and remissions. I say, the fever, in this instance, was seated in the liver and spleen; because pain, heat, soreness, or a sense of weight and fulness, was felt in these organs; because the fœces indicated a vitiated or deficient secretion of bile; because the urine was lateritious, the complexion jaundiced, the tongue yellowish: above all, because so soon as the excitement or inflammation of these organs was diminished, the paroxysms became mild, and, when their morbid actions were subdued, the fever subsided.

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[*] Dr. Pringle says: "The epidemic of the hot season, and great endemic of marshy countries, is a fever of an intermitting nature, commonly of a tertian shape, but of a bad kind, which, in the damper places, and worst seasons, appears in the form of a double tertian, remittent, continued, putrid, or even an ardent fever, all which, however varying in type in different constitutions, and other circumstances, are nevertheless of the same nature, and proceed from like causes; as a proof, both the continued and ardent fever of that season usually terminate in regular intermittents."—*See* PRINGLE, *Diseases of the Army*, p. 7.

General blood-letting was employed but once;* blood was several times taken from the region of the spleen and liver by the cupping instrument; blisters were applied, aperients administered, and mercury, James's powder, and opium, were given repeatedly: the diet and drinks were of a sedative and cooling nature. Is it necessary to state that such remedies would not have been followed by such marked advantages, if the disease had not been of an inflammatory character?

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* Dr. Crampton, Professor of Materia Medica, Dublin College, and Physician to Steeven's Hospital, has often employed, with evident advantage, in the cure of Intermittents, general blood-letting.

CASE IV.

December 20th, 1814. Miss G. æt. 23, Holles-street, of a delicate frame and bilious habit, complains of acute pain in the right temple, stretching to the right eye-ball, which comes on every day, or every second day, about one, two, or three o'clock P. M., and lasts from one to three hours. The pain is sometimes preceded by chilliness or shivering, is always accompanied by heat of the skin and frequency of pulse, and is occasionally followed by partial or general perspiration. Pulse 108; skin hot; tongue whitish; diminution of appetite; slight thirst; bowels constipated; urine turbid. Illness of a week's duration, and ascribed to cold and moisture.

Hirud. x. tempori dextro.
Pil. cath. ex cal. et ex. col. c.

December 21st. Yesterday, at 2 o'clock P. M., a violent paroxysm came on, which lasted nearly two hours; it was preceded by chilliness, and accompanied by heat, to which succeeded slight perspiration; three dejections from the pills; excretions nearly of a natural appearance; pulse 102; skin hot; thirst; confusion of ideas; slight head-ach; disturbed rest.

Hirud. octo tempori dextro.
Pil. ex pulv. Jacobi, cal. et opio.

December 23rd. Better rest; pain and uneasiness in the right temple and head diminished; fever abated; no paroxysm; bowels free.

Cr. pil. ut heri.

December 24th. Sense of heat and soreness in the right temple and eye-ball; some return of fever.

Vesicat. tempori dextro.
Cr. pil.

December 25th. This day, at 12 o'clock, a paroxysm came on, less violent than usual, and lasted about an hour; sense of burning heat in the temple and eye-ball; pulse 98; skin hot; tongue cream-coloured.

Hirud. x. tempori dextro.
Mist. cath.

December 27th. No return of the paroxysm; sense of heat or soreness is occasionally felt in the right eye and temple.

Pulv. Jacobi et cal.
H. cath., p. r. n.

December 30th. A slight paroxysm this morning, of half an hour's continuance; ptyalism.

Omitt. cal.
Cr. pil. ex opio et pulv. Jacobi.

January 1st. Sense of distension and heat in the parts affected; low fever.

Cr. pil.

January 4th. Gradual amendment; return of appetite.

Cr. pil.

January 8th. Yesterday a slight paroxysm, owing to exposure to the cold air.

H. cath.

January 11th. Convalescent.

January 16th. Perfectly well.

COMMENTARY.

Here the fever called Intermittent had its origin in the right supra-orbital nerve and its branches;—perhaps I should rather say, in the vessels and lining membranes of these nerves. In this complaint, best known by the name of Cephalea Intermittens, the functions of life are less disturbed than when the seat of the Intermittent is the liver, spleen, or any important organ; the febrile excitement is consequently less violent, but the pain is generally more acute.

That the fever, in this instance, proceeded from congestion and an inflammatory affection of the nerves and their lining membranes, may be inferred from the good effects of leeching and blistering, from the use of aperients, and of calomel, opium, and antimony.

A FEW GENERAL OBSERVATIONS.

I HAVE here considered somewhat in detail the nature of the fever styled Intermittent: this seemed necessary, in order to illustrate and confirm the opinions already advanced.—My great and principal objects have been, to show the identity of fever, its site, and its inflammatory character. I have wished also to show, that as the disease is governed by fixed laws, so the mode of treatment is governed by fixed principles:—in other words, that the practice is scientific, not empirical.

On looking at the names of the many respectable authors here quoted in favour of a practice which, a few years ago, was so universally condemned, may I not say, I have reason to congratulate myself on a change, to the producing of which, I have been, in some degree, instrumental? I acknowledge, indeed, that several of these gentlemen employ depletion on principles different from those which I have endeavoured to establish: for *their* opinions I feel every respect; and with regard to my *own*, I only wish that they may be examined accurately, and judged of with impartiality. If I be found in error, I trust I shall have sufficient candour to acknowledge that error, and embrace the more rational and just opinion of others.

And here I must not omit to mention the change that has taken place in the sentiments of Dr. Armstrong, as appears from his late Work, entitled, " Some Observations on the Origin, Nature, and Prevention of Typhous Fever,"* in which he says: " The Intermittent, Remittent, and what is called Continued Typhous Fever, pass and repass into each other."

Again, he says: " For I have ascertained beyond a doubt that the Remittent and Continued forms of Typhus are complicated with internal inflammation, separately or combinedly in one or other of the four parts before specified, the inflammation being more intense in the Continued than in the Remittent Typhus: internal inflammation then is probably the immediate cause why Typhus puts on the Remittent or Continued character."

Thus then Dr. Armstrong appears to maintain the *identity* of fever—that it owes its Remittent and Continued characters to internal inflammation, and which is seated in one or more of the viscera, or their lining membranes.* This candid declaration of Dr. Armstrong is a proof at once of the liberality and ingenuousness of his mind; and happy indeed am I to find, that my opinions have, in such material points, the support of the splendid talents of this observing and enlightened physician.

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* See the Medical Intelligencer for May, 1822.

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* These principles, in a great measure, agree with those I have laid down in my Work on Fever, published as far back as the year 1813, which concludes in the following manner:—" From the whole of what has been said, the following inferences may be drawn:

" 1st, Fever is an inflammatory affection.

" 2ndly, Fever is of one kind, of which there are many varieties.

" 3rdly, The varieties depend on the organ or part particularly affected."

ESSAYS

ILLUSTRATIVE OF THE SEAT, NATURE, AND ORIGIN OF FEVER.

IS THE INFLAMMATORY ACTION IN FEVER ESSENTIAL TO THE COMPLAINT, OR ONLY ACCIDENTAL?

At the present day there are many practitioners and writers who deny the inflammatory nature of Typhous, Bilious, and other Fevers, yet acknowledge that during the progress of these fevers inflammation may, and occasionally does arise, in one or more organs of the body, in consequence of accidental determinations of blood, or previous weakness and irritation; and that, in such cases, blood-letting general or topical is indispensable. This admission is important, not only as it leads to a mode of treatment which may save the life of the patient, but because it shows that even in Typhus the fear of the lancet begins to subside: it shows, moreover, that the attention of the faculty is now directed to the state of the organs of the body, whereas before the publication of some late

Works on Fever, our inquiries were limited to the state of the pulse and humours, the degrees of strength or debility, the condition of the skin, and the appearance and nature of the eruption, which was supposed to characterize the fever; thus marking the progressive change in the minds even of the most prejudiced, with regard to the nature of fever.

If this inflammatory affection of different organs be accidental, how comes it to pass that in every fever one organ, perhaps two, or more, are attacked with inflammation, although the patients had previously enjoyed undisturbed health?

If this inflammatory affection be accidental, depending on particular determination of blood, or on organic weakness or irritation, how does it happen, that were ten thousand persons attacked with Typhus, each would be found to labour under symptoms indicative of inflammation of the brain and its consequences,* although not ten perhaps of the ten thousand had previously complained of any weakness or delicacy of this organ?

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* These are pain, heat, sense of weight or fulness of the head, suffusion of the eyes, intolerance of light and noise, delirium, convulsions, paralysis of the sphincters, of the muscles of deglutition, perhaps of those of the whole body.

Shall we ascribe such uniformity in the occurrence of symptoms, indicative of an inflammatory affection of the brain in Typhus, to accidental determination?

Shall we not rather say, that the operations of nature, whether in health or disease, are governed by fixed laws?—In Bilious Fever the skin and eye are mostly yellowish; the secretions are vitiated; the tongue is foul and yellow; and pain, heat, or soreness is felt in the liver, accompanied by other symptoms indicative of inflammation of this organ.—In Gastric Fever the stomach is as uniformly attacked with pain or burning heat, attended by retching, and other symptoms indicative of inflammation: and in this and all other fevers experience shows, that the increase or diminution of fever is in proportion to the increase or diminution of the organic affection; that in the treatment sedatives and evacuants are our efficient remedies; and, that the appearances after death are indicative of inflammatory action and its consequences in the different organs in which fever may have originated.

What shall we conclude? To me these facts prove that fever is secondary, arising from inflammation in one or more organs of the body. But those who take a different view of the subject, on being asked in what fever consists, or where it is seated, reply, that the subject is involved in obscurity; that it is, in short, beyond human comprehension,—at the same time, they assert there is some probability in the conjecture that fever is seated in the nerves, or the humours, or in both; and that it is a disease of debility, of putrefaction, or of spasm, rather than of inflammation. They further maintain that the treatment must depend on accidental circumstances, and that no two cases can be treated alike. Here then assertion and conjecture are placed in opposition to simple facts and conclusive reasoning. This is poor consolation to the philanthropist or the philosopher.

But why should Typhus, any more than Pneumonia be buried in obscurity? The causes and the phenomena of both complaints are known, and the effects of sedatives, and the appearances after death, are now as well ascertained in the one as in the other. Why not then, by pursuing the same train of reasoning, arrive at the same degree of certainty with regard to fever as to Pneumonia.?

According to the view which I have taken of this subject, we have some principle on which the mind can rest, some guide to direct us in the treatment;* whereas what is the situation of the physician who has no fixed idea of the seat or nature of fever? Obliged to prescribe for symptoms without any just notion of their causes, or of the probable progress and termination of the disease, must not his mode of treatment be wavering and irrational?†

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* Dr. Beddoes, p. 41 of his Researches Anatomical and Practical concerning Fever, says: "If fever can be reduced to topical inflammation, (though in that case I soon found that in the different varieties the focus of disease must be placed in different organs,) it is clear that this reduction alone will exceed all other efforts put together in rendering practice simple and certain; the most valuable part of medical knowledge, that which regards inflammation, becoming precisely applicable to fever."

† See my "Essay on the Utility of Blood-letting in Fever," and on "The Morbid Anatomy of the Brain in Typhous or Brain Fever."

DOES A GENERAL INFLAMMATORY ACTION EVER EXIST IN TYPHUS? IS SUCH A STATE OF THE SYSTEM COMPATIBLE WITH LIFE?

The symptoms of inflammation and congestion of the brain in Typhus are so obvious, that they cannot be overlooked. Some authors ascribe them to debility, or irritability of the brain; others to an accidental determination of blood; while others again maintain that they depend on an inflammatory affection of the vascular system at large. If this were so, it would follow that the aorta ascendens and descendens, and the numerous branches which these send off to the heart, the brain, the lungs, the stomach,—in short, to every organ of the body and their containing membranes, would be at the same time in a state of inflammation.

When the heart is inflamed, the symptoms indicative of such inflammation are present, and the derangement of the system is considerable:—when the lungs, the derangement of the system is also considerable, and, in both instances, the danger is great. The same may be said of almost every organ when inflamed. What then must be the situation of a patient, labouring under a simultaneous attack of inflammation in all the organs of the body?

Death often supervenes to inflammation of a single organ in four, in three days, even in a shorter period; and, on examination, we commonly find that such organ is disorganized:—is it rational then to suppose that life could exist under a combined and universal inflammation of every organ and membrane of the body? We might as well suppose that life would continue without the aid of those organs on the healthy actions of which depends life itself, for, during inflammation, the functions of the organ or organs affected are destroyed or deranged.

But in truth, a general inflammatory affection does not subsist in Typhus, because in this complaint there are no symptoms indicative of inflammation of any organ except the brain, and these are uniformly present. I speak here of pure or unmixed Typhus, that is, when the brain alone is affected; but when the fever is of a mixed character, it is accompanied by inflammation of other organs, as the stomach, the liver, &c.

IS OUR TREATMENT OF FEVER RATIONAL OR EMPIRICAL?

Several practitioners maintain that we are still ignorant of the seat and nature of fever; consequently, that we have no guide, no principle to direct us in the treatment.—Is this the case?

In Typhous or Brain Fever the brain is uniformly affected, and this affection is denoted by many, and sometimes all, of the following symptoms: acute or dull head-ach, sense of weight, heat or fulness of the head, vertigo, tinnitus aurium, throbbing of the temporal and carotid arteries, suffusion of the eyes, delirium, deafness, coma, difficult articulation, loss of speech and sight, impeded deglutition. These symptoms indicate inflammation of the brain, and its consequence, compression, because the same symptoms are indicative of Phrenitis and its consequence, because in Typhus as well as in Phrenitis they are caused by intemperance, exposure to cold and wet, violent exercise, the stronger passions, &c. are relieved or cured by evacuants, sedatives, and a cooling regimen, and aggravated by opium, fermented liquors, and astringents. Moreover, in both complaints, after death, the vessels of the brain are found preternaturally florid or turgid, and the membranes are often thickened, and accompanied by an effusion of lymph, blood, or serum.

These facts prove, that Typhus as well as Phrenitis, is essentially inflammatory. Now, as in these diseases we can trace the connexion between the sign and the morbid change, between cause and effect, and as we know what remedies will prove useful or injurious, we have certain data on which to depend ; a fixed principle to direct us—consequently, the mode of treating fever is rational, not empirical.

What then is the reason why practitioners, who so generally agree with respect to the seat and nature of Phrenitis, Pneumonia, &c., differ so widely with respect to the seat and nature of Typhus ?

This diversity of opinion seems to me to be chiefly owing to our neglecting, in our inquiries into the nature of Typhus, to call in the aid of morbid anatomy, which has been fully employed in our inquiries into the nature of Phrenitis ; and this neglect may be ascribed, partly to the groundless apprehension of contagion, and partly to the erroneous views and theories that prevail with respect to Typhus. But a persevering and dispassionate inquiry is now abroad on this subject,* and little doubt can be entertained but that, in some time, the same accordance of opinion will subsist in regard to the seat and nature of Typhus, as of Phrenitis, Pneumonia, and other complaints allowed to be inflammatory.

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* Dr. Cheyne remarks that the principal object of Dr. Beddoes' Researches on Fever, was to show that dissections, after fever, always bring to light marks of inflammation; and Dr. Cheyne's own dissections, detailed so accurately from p. 67 to 116 of his excellent Report of the Hardwicke Fever Hospital, &c. appear strongly to confirm this position. To these he seems to have been indebted for a knowledge of the nature of those changes which were taking place in the character of the epidemic, and for seeing the necessity of adopting a depletory plan of treatment in cases in which the debility was so great, as to have seemed to demand the use of stimulants and cordials.—*See Dublin Hospital Reports*, 1817.

WHAT ARE THE REMEDIES MOST COMMONLY EMPLOYED IN CEPHALIC OR TYPHOUS FEVER BY THOSE WHO DENY ITS INFLAMMATORY CHARACTER?

Cold air, cold affusion, aperients of different kinds, the ice cap, subacid drinks, subacid fruits, soda water, the saline effervescing draught; sometimes emetics and antimonials. But are not all these sedative, calculated to abate or remove inflammatory action? Indeed, if we except blood-letting, it would be difficult to discover any set of remedies of a character so decidedly anti-inflammatory. Moreover, all cordials and stimulants are now prohibited in the first stage of fever, and a strict abstinence from fermented liquors and every kind of nutritious diet is enjoined. Here then, not only the remedies that are prescribed in Typhus, but the regimen that is adopted, are anti-inflammatory.

But the mode of treatment now mentioned is often found sufficient for the cure of Typhus; is not this, therefore, a proof that Typhus is a disease essentially inflammatory? If it consisted in debility, is it to be supposed that the strength would be restored, or the disease removed, by abstinence, sedatives, and evacuants?*

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* Dr. Armstrong, in his Practical Illustrations of Typhous Fever, page 130, says: "At an early period of such cases the strength is depressed, not subdued; and as the depression is then principally the effect of a topical disorder, venesection, by diminishing or removing that disorder, diminishes or removes the load which impeded the vital functions, and the strength, compared before and after the operation, is, therefore, increased instead of being lessened."

WHENCE IS IT THAT THE SEAT AND NATURE OF ENTERITIS, PNEUMONIA, AND SOME OTHER DISORDERS, ARE WELL UNDERSTOOD, WHILE THE SEAT AND NATURE OF TYPHUS ARE CONSIDERED INSCRUTABLE?

In Enteritis and Pneumonia the pain is generally so acute, and the other symptoms characteristic of these diseases are so urgent and manifest, that they cannot be easily mistaken, nor can the proper mode of treatment be overlooked. But the pain is sometimes sub-acute, and the fever low; in which case, partly on account of the absence of any prominent symptom, and partly because the symptoms were often ascribed to nervous debility, cordials and stimulants were formerly prescribed instead of sedatives, evacuants, and counter-irritants. It is scarcely necessary to mention, that so long as such a capital error in the mode of treatment existed, the consequences were too frequently fatal. The error was discovered by an examination of the lungs and bowels after death: new views were thus disclosed to the mind of the physician, who witnessed marks of inflammation and its consequences in these organs which he had considered in a healthy state, while others, which he had supposed diseased, were found in a state perfectly natural. When the practitioner became conversant with these facts, he came to the conclusion, that a weak pulse, a low fever, and prostration of strength, might be the attendants of certain modifications of inflammation.

But, in opposition to truth and experience, (and is not opposition always made to every thing new or useful?) some there were who still maintained that the inflammation here met with was the effect of the fever; some, of determination of blood; while others maintained that it was merely incidental. However, after repeated observation of the same phenomena, connected with the same morbid appearances, the Faculty have agreed, that certain modifications of inflammation may produce symptoms of indirect debility, which require the employment of evacuants, sedatives, and counter-irritants.

And for this valuable discovery we are indebted to our knowledge of morbid anatomy. But, even in acute cases of Enteritis and Pneumònia, when the symptoms were urgent and manifest to the senses, how, in the first instance, could the cause of death have been ascertained, unless through the medium of morbid anatomy? We could not have known, *a priori*, that there was a thickening and adhesion of the membranes, effusion of coagulable lymph or serum, a preternatural degree of vascularity, attended often by gangrene or the formation of abscesses: with these changes of structure we could only have become acquainted by a *post-obit* examination.

To morbid anatomy we are also indebted for our acquaintance with the nature and cure of other diseases. Thirty years ago little was known of hydrocephalus; and when death occurred in consequence of this complaint, it was ascribed to different causes,—to worms, convulsions, nervous fever, &c. The mystery was revealed by the appearances presented after death.

No just idea was entertained of hydrothorax, of several diseases of the lungs, or of any of those of the heart, before the pursuit of morbid anatomy threw light on our pathological inquiries. May not the same observation be made in respect to the disorders of the liver, intestines, kidneys, and bladder? Is not this the source of our lately acquired knowledge of that formidable disease, cynanche trachealis? In short, do we possess any certain knowledge of the seat and nature of any disorder, save what has been obtained through the medium of morbid anatomy? This, therefore, confers real knowledge, from which is derived all that is truly useful and valuable in medicine. From this source we derive that knowledge which enables us to trace the connexion between cause and effect, between the sign and the morbid change; that knowledge by which we are enabled to direct our attention to the seat of disease, to ascertain its nature, and to apply those remedies, and those only, that are most likely to prove serviceable. From the want of which all was, and without it, all would still be, chaos and conjecture.

To this source then we must direct our unremitting attention, in order to ascertain the seat and nature of fevers.* It is only of late years that the mind of the Faculty has been directed to this subject: much has been done—much yet remains to be accomplished; but, from what has been done, there is reason to hope that the labours of those who undertake the pursuit will be crowned with success.

The functions of the different organs of the body in a state of health, are governed by fixed laws; *diseased* actions in the same organs are also governed by fixed laws; these morbid actions observe a certain course in their rise, progress, and termination, whether that termination be in health or death; when, therefore, such regularity exists in the operations of nature in respect to those organs, and such of their diseases as we are acquainted with, can it be supposed that fevers, which in their phenomena and course are so uniform, have no seat, no fixed laws by which they are regulated?—this would be to leave a blank in nature. But observation and experience, every thing around us, all that we know of disease, and what we have lately discovered of fevers, tend to show, that if the proper mode of investigation be pursued, their seat and nature will be as fully ascertained as those of Enteritis and Pneumonia.*

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* See my Essay on the "Morbid Anatomy of the Brain in Typhous or Brain Fever."

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* Some excellent observations on the utility of morbid anatomy are to be found in the Works of Sir A. Cooper, Bart. This distinguished practitioner has employed with zeal and success the powers of his comprehensive mind in the advancement of science and the interests of humanity.

IS THE FEVER WHICH ACCOMPANIES PNEUMONIA AND TYPHUS PRIMARY OR SECONDARY?

PNEUMONIA is characterized by pain, sense of weight, oppression, heat or uneasiness in some part of the thorax, by cough, dyspnœa, and expectoration. This affection is attended by the following symptoms which constitute fever; chilliness or rigour, heat of skin, frequency of pulse, thirst, foulness of the tongue, restlessness and prostration of strength; to these we may add a disturbed state of the digestive organs, and often of the functions of the brain. When the inflammation of the lungs is mild, the fever is low; when violent, the fever runs high; and when the inflammation is subdued, the fever disappears. Moreover, the fever comes on simultaneously with the affection of the lungs, or subsequently to it; and the remedies which cure this affection remove the fever. These facts show that the fever which accompanies Pneumonia is secondary.

In Typhus there is pain, sense of weight, fulness, oppression or uneasiness in the head, and some disturbance of the animal functions. This state of the brain is attended by the symptoms which constitute fever ; these are, chilliness or rigour, heat of skin, frequency of pulse, thirst, foulness of the tongue, restlessness and prostration of strength, to which we may add the disturbance of the stomach, and often of the vital functions. The fever is consequent to, or simultaneous with, the affection of the head : if the disease of the brain be mild, the fever is mild; if violent, the fever is violent; and if cured, the fever subsides. The medicines which relieve or cure the disease of the brain, diminish or remove fever;* and those which aggravate this affection increase the fever. Is not the fever, therefore, which appears in Typhus as well as in Pneumonia, secondary?

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* Mr. Gurlay, on the Epidemic Fever, as it appeared in a parish in the north of Scotland, in 1813, says : "To most the abstraction of blood operated as a charm : so soon as the vein was opened, the head-ach gradually went off."—*See Ed. Med. and Surg. Journal for* 1819.

A FEW OBSERVATIONS ON THE EFFECT OF PURGATIVES IN TYPHUS.

I OFTEN meet in consultation eminent practitioners who daily administer to their patients, in Typhus, active aperients, and who dwell with satisfaction on their efficacy when they produce full and copious evacuations: these evacuations are generally fluid and yellowish; they owe their colour to the bile; and they proceed chiefly from the numerous exhalants of the alimentary canal, and the other abdominal viscera.

But these exhalants are the extremities of arteries;—are not the evacuated fluids, therefore, abstracted from the blood—and, is not this blood arterial? This mode of treatment, though tedious, frequently succeeds; in which case the heach-ach abates, the fever subsides, and the patient recovers strength. Does not this prove that the debility is indirect, and the fever inflammatory?

For several days successively I have witnessed from one pint to three quarts of fluid thus withdrawn from the blood by means of aperients, and this too by physicians who, from an apprehension of debility, hesitate to abstract eight ounces of blood from the arm or the temporal artery. A little reflection, however, will show, that if debility were to be apprehended, it would follow in a tenfold degree the copious abstraction of serous fluid from the alimentary canal, while the benefits so obtained is slow and uncertain, when compared with the relief which is often observed immediately to follow from one small general blood-letting.*

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* See Dr. Hamilton on the Use of Purgatives.

A COMPARISON BETWEEN THE EFFECTS OF GENERAL AND LOCAL BLOOD-LETTING.

There are many practitioners who, in the treatment of Typhous or Brain Fever, apply leeches in large numbers to the temples, yet hesitate, from a fear of debility, to abstract six or eight ounces of blood from the arm; and, as in the milder cases of the complaint the happiest effects are occasionally observed to flow from the practice, they consider *topical* not only safer, but also more efficacious than *general* blood-letting. The question is important in a practical point of view, and therefore demands inquiry. In fever it is not unusual to apply to the temples, for three or four days successively, or every second day, twelve or fifteen leeches. Suppose twelve be thrice applied, this gives the number thirty-six. The calculation is, that every leech abstracts from half an ounce to an ounce of blood, when the bleeding from the orifice is encouraged: this, at an average, would amount to twenty-seven ounces, a quantity three times greater than that proposed to be taken from the arm, and from which, in the minds of those who hold Typhus as a disease of debility, so much danger is apprehended. But as patients are sometimes cured of fever, and restored to strength by the loss of the greater quantity, no one will assert that the body will be weakened by the abstraction of the smaller.

The great object of blood-letting, whether in fever or inflammation, is to destroy the diseased action; and this is accomplished by changing the condition or mode of acting of the vessels affected. I would, in the first place, ask, what are the visible, the immediate effects of opening a vein in the arm? Do we not observe that the face and lips become pale; that the strength and frequency of the pulse are diminished; that the heat of the skin and the pain of the head abate; that the action of the heart is lowered; and that this change is accompanied by a tendency to deliquium, by perspiration, by a return of the secretions, and by copious dejections?* These phenomena are familiar to every practitioner; they indicate a reduction of excitement, and a change in the mode of acting of the whole vascular system. While such a movement is going on in the *general* habit, the vessels *particularly* engaged must participate in the change; and, during this period, is it not clear that the morbid actions which constitute fever will be suspended or subdued? If they be subdued, the disease is cured; and this is often found to follow the abstraction of six or eight ounces of blood from the arm.

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* The debility here produced is temporary only, and *apparent* not *real;* for as an immediate impression is thus made on the disease, the strength must be rather preserved than weakened.

In the next place we must inquire into the more obvious and sensible effects of *topical* blood-letting. Do we find from the application of thirty or forty leeches to the temples the same diminution of heat, pain, and vascular action, as from the abstraction of eight ounces of blood from the arm? Certainly not. Therefore, when the affection of the brain in Typhus is *deep-seated* or *violent*, the application of leeches can seldom be attended with any decided benefit: if the fever be mild, they often have the desired effect; but, in every instance, their operation is slow and uncertain. Why, then, prefer a remedy, doubtful in its nature, and attended, comparatively, with a great loss of blood, to one more immediate in its operation, and more efficacious?*

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* Dr. Prichard, speaking of the effect of venesection, when there was delirium or other affection of the head, says: "The benefit that resulted from such evacuation often exceeded my most sanguine hopes: in the course of twenty-four hours the patient was often found to have passed from a complete Typhomania, and an almost total unconsciousness of external impressions, to a tolerably perfect possession of his faculties."—*See* Dr. Prichard *on the Epidemic Fever which prevailed at Bristol.*

UNDER WHAT CIRCUMSTANCES OF FEVER MAY BLOOD-LETTING BE EMPLOYED WITH ADVANTAGE?

The main object in the treatment of fever is, to diminish or remove the pain, sense of weight, heat or uneasiness in the organ or organs concerned; blood-letting, therefore, may be employed with advantage in the first stage of all fevers, when the symptoms are urgent. The earlier the operation is performed, the more likely it is to make an effectual impression on the disease:*—if on the first, second, or third day, the probability is that it will be followed with decided benefit; but it may diminish the violence of the disease on the seventh, tenth, or even at a later period.

As fever is often of a mixed nature, it frequently happens when the more important organ, or the organ more deeply affected, is relieved; that the disease is developed in another, accompanied by a new series of febrile actions. This is a fact, which, from its practical import, ought never to be lost sight of by the practitioner. He must now act as though a new fever had arisen; and his principal attention should be directed to the relief of the organ in which it has originated. In such a case we are not, in a practical point of view, to compute the continuance of fever from its onset, but rather from the development of disease in the organ recently affected. Under such circumstances we may employ blood-letting with benefit to the patient on the eighth, twelfth, or even twentieth day of fever,* reckoning from the first day of the attack, though but the second, third, or fifth, if we reckon from the commencement of the new train of febrile symptoms.

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* Sydenham, treating of the Continued Fever of the years 1661—62, &c. speaks thus of his mode of cure in the young and vigorous: "Primum in curatione locum phlebotomiæ attribuo quæ (præterquam in casibus inferius memorandis) sine salutis periculo hic omitti nequit."

When blood-letting affords manifest ease, this is mostly accompanied by faintishness, or syncope, by a diminution of the heat of the skin, and of the force and frequency of the pulse, and by perspiration: these symptoms are familiar to every practitioner; but, what may appear extraordinary, the heat of the skin, in some instances, is increased, and the pulse becomes stronger and quicker. In such cases it is obvious that the energies of the system were previously overpowered, but on the removal of the depressing power, recovered their former vigour. The danger in these is considerable, not merely on account of the oppressed and disordered condition of the organs concerned, but because the coldness of the skin, the weakness of the pulse, and the apparent debility of the patient, might lead the practitioner to administer cordials and stimulants. It is scarcely necessary to observe, that so capital an error would be attended with the most injurious consequences. We are, therefore, in employing the lancet in fever, not to be guided merely by the state of the pulse, the temperature of the skin, the strength or debility of the patient, and the stage of the complaint, though these circumstances require our serious consideration; but we should direct our attention more especially to the state of the organ or organs engaged and the degree of derangement that has taken place in their functions. If, for example, the brain is the seat of disease, we are to consider attentively what is the degree of pain, heat, and fulness,—what the sense of weight, oppression, &c. in this organ, and how far the animal functions are disturbed; from a consideration of which, we shall be better enabled to form a correct judgment of the propriety or impropriety of the practice, than from the condition of the pulse and skin, or from the other symptoms above-mentioned.

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* Dr. Cheyne, in his Report of the Hardwicke Fever Hospital, for the year ending 31st March, 1817, says, at p. 16: "Blood-letting often strangled the disease in its birth; and, when practised on a relapse being threatened, several times restored the patient to health in a few hours. I was not deterred from using the lancet by the appearance of petechiæ, nor by the tingling heat of the skin."

With regard to the quantity of blood necessary to be abstracted in any particular case, no fixed rule can be laid down: here we must be governed by the violence and obstinacy of the symptoms, and should not so such regard the quantity of blood taken, as the effect it has produced. My practice, for some years, has been to bleed until the pain, sense of weight, heat or uneasiness in the organ affected, is relieved or removed; and to repeat the operation on the return of the pain, heat, &c., at shorter or longer intervals, every fourth, eighth, or twentieth hour, as circumstances may require; and, if we proceed with judgment, it will seldom be necessary to have recourse to venesection a fourth, or even a third time, unless the attack be violent, or unless the disease be developed in a second organ. In this manner then the strength of the patient is preserved, and fever often speedily removed.

If proper attention be paid to the manner of performing the operation, small bleedings will, in general, be sufficient. I seldom abstract at any one time more than eight ounces; and if the patient be placed in an erect or sitting posture, and the blood be drawn from a large orifice, this quantity, or even a smaller, will mostly produce the desired effect. But I should here observe, that I am in the daily habit of applying leeches in the vicinity of the organ engaged immediately after general blood-letting,* and this too without being influenced by the advantage already obtained, even though the fever may have apparently subsided. My object is to destroy, and with the least delay possible, the morbid action, which I find by experience is apt to recur a few hours after it has been, to all appearance, removed: and there cannot be a question but what, in many instances, local blood-letting diminishes the excitement in the organ affected, and, in this way, the action of the heart and arteries; while general blood-letting, by reducing in the first instance the action of the heart and arteries, alters or lessens the disordered action in the part affected. In illustration, we have only to notice the effect of the application of leeches to the chest in children labouring under Pneumonia, which is often a removal of the local symptoms, accompanied by faintishness or syncope.

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* Dr. Armstrong, treating of the effects of blood-letting in fever, says: " In almost all cases in which there is manifestly an accumulation of blood in a part of importance, attended with universal excitement, general blood-letting should be adopted first, and local blood-letting afterwards; because the general blood-letting, if carried sufficiently far, will immediately diminish the violent action of the heart and arteries, by which the inflammation is maintained, while the local blood-letting will make a still further impression on the heart, and may likewise induce a change of action in the part affected, on the principle of sympathy or revulsion."—*See Practical Illustrations of Typhous Fever*, p. 138.

In some cases of fever blood-letting is unnecessary, in others, injurious. If fever be mild, it is unnecessary; because abstinence, confinement, diluents and aperients, are sufficient to cure the complaint. The same mode of treatment is equally applicable to Catarrh, Pneumonia, Gastritis, and other inflammatory diseases, when they present themselves under a mild form. Blood-letting is injurious if effusion have taken place into any of the great cavities of the body, if an abscess be formed in any one organ or its investing membranes, or if any portion of either be affected with gangrene.

ON THE CONSEQUENCES OF NOT BEING ABLE TO ASCERTAIN THE NATURE OF EPIDEMIC FEVERS ON THEIR FIRST APPEARANCE.

It is asserted by some writers, that during the continuance of the same epidemic, three or four different kinds of fever may arise; and that time, and a trial of various remedies, must be allowed, before a proper method of treatment can be discovered either for the cure of the Epidemic itself, or its varieties.

Epidemics are of various duration: they may continue three, six, or nine months, or a longer or a shorter period. When an Epidemic prevails, the first duty of the physician is to discover the most successful plan of treatment. But how is this to be accomplished? By observation and experience; by attentively watching the symptoms and progress of the disease as it may present itself in different habits, and making a fair trial of the remedies employed under similar circumstances.

These remedies are numerous, and opposite in their effects. Baths hot and cold, wine, opium, antimony, camphor, bark, ammonia, barm, cathartics, the neutral salts, mercury, blood-letting, air heated and cold, sudorifics, and hot and cold drinks, have been employed and extolled in their turn. The question now is, with which of these shall we commence, or how long make a trial of each before we can decide on the successful remedy, or the successful combination of remedies. Shall we be able to decide in one, in two, or in three months?

Suppose an Epidemic Fever of six months duration to prevail in Dublin, and that 10,000 persons are attacked: we have at least 50 practitioners, including all branches of the profession: place the 10,000 equally under their care, that is, 200 under each: a trial is now to commence of the different remedies mentioned, each practitioner beginning and ending with such as he may conceive best adapted to the relief of the patient. What is the consequence?

Many of these remedies possessing opposite and different properties, must necessarily prove useful in one case, and injurious in another. But a trial is to be made, and the advantages or disadvantages resulting must be left to the judgment of the practitioner. Now, making every allowance for the discrimination and judgment of some, and the total want of these faculties in others, I leave to the reader to form in his own mind an idea of the time required, and the sacrifices that must be made, by men of conflicting opinions and prejudices, before they can come to any decision as to the most serviceable plan of treatment. One thing at least is certain, that many lives must be lost during the trial, in consequence of the administration of remedies in their nature and effects so opposite. Shall we say three by each practitioner? A small number, indeed;—yet as there are 50, the amount of lives thus lost would not be less than 150.

But this is not all:—we are moreover told, that, during the continuance of the same Epidemic, different kinds of fever arise, one, two, or three, and that each of these also demands a distinct method of cure; again, therefore, we must recommence our labours—again have recourse to a trial of the same remedies. Now, making ample allowance for the knowledge already obtained by the investigation of the Epidemic, let us suppose that each practitioner loses but one patient in this new inquiry—and what follows?

Three kinds of fever arise: three patients fall victims to the experiments made by every practitioner in his pursuit of a proper mode of cure. The consequence is, that 150 patients must thus suffer; which number, added to the 150 who perished in the Epidemic, will amount to 300: that is, about a thirty-third of the whole number attacked. This is a great waste of human life, and much to be deplored; more especially when we consider that it arises from an ignorance of the seat and nature of fever, and that this ignorance proceeds chiefly from the neglect of an inquiry into the morbid appearances of the several organs engaged in fever. But, independently of the 300 patients who perished in consequence of the experiments made to discover a proper method of cure, it is necessary also to take into account the number that must die, even under the most rational plan of treatment, by neglect, intemperance, the violence of the attack, age, and other causes.

The reader will perceive that the observations now made naturally give rise to the following important question:—Might not so great a sacrifice of human life be prevented, by having some fixed idea of the seat and nature of fever, and a scientific and settled mode of treatment?

DO DETERMINATIONS OF BLOOD TO PARTICULAR ORGANS TAKE PLACE IN FEVER?

I SHALL here make a few observations on the phrase "determination of blood," so often employed by physicians, who attribute the pain, heat, weight, and uneasiness, felt in different organs during fever, to such determination; and, while they allow the application of leeches and blisters for the relief of the parts affected, they regard this as a secondary object, the affection itself being but secondary, the consequence of febrile actions in the vessels of the system at large. Where fever is seated, or in what it consists, are points on which they declare themselves incompetent to decide.

May we now ask, can there be a determination of blood to any organ, as a consequence of the febrile actions of the general system? The heart and blood-vessels transmit the blood; each organ is regularly supplied with a determinate quantity, proportioned to its wants, the importance of its functions, and the quantity of the circulating mass. Where general plethora exists, there is an increased fulness of the vessels of every part and organ; and the reverse takes place where there is a deficiency of blood.

But, where lies the power of transmitting to different organs, at different periods, a preternatural quantity of blood? The heart and blood-vessels are the great movers and conduits of the circulating mass? Does the power lie here? This is not admitted by any physiologist, nor is it consistent with reason or the laws of the animal economy. How then are we to account for the pain, the throbbing, the sense of weight or fulness, felt in fever in different organs?

In the same manner, and on the same principle, as in Catarrh, Enteritis, Phrenitis. In these diseases local inflammation exists, and the general febrile actions are the consequence of such local inflammation: so it is with fever, and this I have endeavoured to show from an examination of its causes and phenomena, from the effects of venesection and sedatives, and from the appearances exhibited on dissection.

On the other hand, blushing has been advanced as an argument in favour of the doctrine of a determination of blood; and the sudden suffusion of the face and forehead, and the sudden disappearance of this suffusion, would seem to show that the doctrine was well-founded. But is not blushing the effect of a certain feeling or passion of the mind? Does not this feeling act as a stimulus to the vascular system of the brain, and thus produce an excitement and congestion of the head and face?

In proportion to the degree of this feeling, different effects will be produced in different individuals:—in one, for example, the suffusion will be merely momentary; in another, it will be accompanied by vertigo, loss of memory, and confusion of ideas;* while in a third, if the feeling or passion be intense, and long continued, we find head-ach, frequency of pulse, heat of skin, and the usual febrile symptoms. Blushing, therefore, may be regarded as the consequence of a temporary excitement and congestion of the brain, induced by a certain feeling or passion of the mind; in proof of which we may remark, that the violent or depressing passions often produce apoplexy, and fevers of the most dangerous type.

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* In illustration of this particular point, read the simple and interesting account of the embarrassed feelings of Marmontel, when a youth, and about to deliver his first oration at the College of Bareges.

IS FEVER CONTAGIOUS?

I AM disposed to think it not contagious, for the following reasons:

1. Fever often attacks one, two, or more inhabitants of a close apartment or dwelling; or ten, fifteen, or twenty of an asylum or manufactory where it had not previously existed, and whose inmates had not had any intercourse with fever-patients.

2. If these fever-patients be removed to clean, well-ventilated houses, the inhabitants of these houses will not be infected.

3. If the apartment, asylum, and factory, in which fever first appeared, be cleansed and ventilated, and preserved pure, they may again be inhabited with safety; but cleanliness and ventilation neglected, fever returns.

4. In the room immediately adjoining that of a fever-patient, fever will not appear if the room be well ventilated.

5. In fever hospitals, when clean and well ven-

tilated, the physicians, clergymen, and the other attendants on the sick, are not peculiarly liable to catch fever.

6. In some hospitals fever-patients are indiscriminately mixed with patients labouring under other diseases, yet the fever does not spread, provided due attention be paid to cleanliness and ventilation.

7. Patients labouring under a chronic or acute affection of some of the abdominal or thoracic viscera, are often placed in the bed of those who an hour before had died of fever; and yet, in well-ventilated hospitals, such patients are not liable to fever.

8. Though I cannot but approve of the means employed to purify the clothes of fever-patients, I understand that, in some hospitals, though kept under the pillows and beds of the patients, and worn after their recovery without any previous scouring or ventilation, they have not been found to produce fever.

9. The porters who assist the fever patients in and out of the fever carts, do not, in consequence, suffer from fever.

10. The poor visit their friends and relatives in well-regulated fever-hospitals with impunity.

11. The matron, register, apothecary, and attendants, who inhabit clean and well-regulated fever hospitals, are not more frequently seized with fever than others who have night-duties to perform in dwellings similarly constructed, and who are exposed to the same currents of cold air.

12. The inhabitants in the immediate vicinity of fever hospitals do not suffer from fever in consequence of such contiguity.

13. Those who examine the bodies of fever-patients after death, are not, in consequence, attacked with fever.

14. In my numerous attendances on fever-patients among the middling and upper classes, I cannot recal to my recollection a single instance where fever was communicated to a second individual of the family, provided due attention was paid to cleanliness and ventilation.

15. If fever were infectious, it would be conveyed from house to house by physicians and

clergymen previously in attendance on the sick; this, however, is contradicted by experience.

Here are some reasons for considering fever not infectious.

IS FEVER PRODUCED BY A LOCALLY VITIATED STATE OF THE AIR?

In the close lanes, alleys, and courts of this city, fever is almost constantly present. To account for this we must observe, that on every side, in every corner, and in the passages to and from the houses so situated, filth of every description is accumulated, the effluvia from which must necessarily contaminate the air.

Cleanse and ventilate these courts, lanes, alleys, and dwellings, and fever disappears: suffer them again to become foul and ill-ventilated, and fever returns.

Crowded, ill-ventilated apartments of every description, are among the most common causes of fever.

In the late Epidemic the poor inhabitants of close, ill-ventilated, and crowded cabins, were the principal sufferers; while in the better ranks of life the principal sufferers were physicians, clergymen, and others, who visited these patients in their own foul apartments: for these persons, in consequence of their attendance, were necessarily exposed to the influence of the same vitiated air which originally produced fever. But we must always bear in mind that fever is excited by different causes, as intoxication, violent exercise, anxiety of mind, want of food and fuel, night-watching, exposure to cold and wet, &c. all which are too often overlooked during the prevalence of an Epidemic.

In the neighbourhood of Baldoyle, Malahide, and Fingall, there are several marshes containing dead animal and vegetable matter; fever is prevalent in these districts, more especially during the summer and autumnal months.

From what has now been stated, it would appear that fever is produced by a vitiated state of the air, which may be caused by the effluvia arising from the body in crowded, ill-ventilated apartments, from the filth of close lanes and alleys, from putrid water, or dead animal and vegetable substances: these causes are local, confined in their influence, and limited in their operation; but the atmosphere at large is not contaminated or infected. As a further corroboration of the arguments already adduced, we may remark that, during the prevalence of the late Epidemic in this kingdom, several districts were slightly, and others not at all, infected: and, though some thousands were attacked, yet tens of thousands escaped. We may further observe, that the prisoners and other inmates of some of our jails, owing to ventilation and a well regulated discipline, were not infected, although fever prevailed in their immediate vicinity.

But it may now be asked, if the atmosphere at large was not contaminated, why did fever exist so very generally throughout the country? I reply, that the same local causes which produced fever in one part of the country also existed in another; and these are sufficient to account for its simultaneous and general appearance.

I have said, that a vitiated air is a powerful agent in the production of fever; but the nature of this vitiation is involved in so much obscurity, that I barely touch on it with a view to direct the attention of the reader to the subject.

It appears that this vitiation of the air is caused by respiration, by the effluvia that arise from the body in crowded, close, ill-ventilated apartments, and from the stagnant water and the filth of all kinds with which the cabins of the poor are too often surrounded.

Does this vitiation then partly depend on a diminution of vital air, and an increase of the carbonic acid and the ammoniacal gases?

It may now be asked, is this vitiated air sufficient to produce fever?

That crowded court-houses, assemblies, and close apartments of all kinds, have caused fever, is generally acknowledged; and perhaps there are few of my readers who have not felt headach, chilliness, languor, fugitive pains in the back and loins, thirst, and other febrile symptoms, after having remained some hours in a fashionably crowded assembly.

I have said that the vitiated air which produces fever is local: by way of illustration, I may be allowed to argue in the following manner: The waters in many parts of the same river, sea, or ocean, are, or may be, poisoned, and the fish that inhabit such waters, or may accidentally come within their influence, sicken or die; but the adjacent waters are pure, otherwise the fish could not live. This shows that the vitiation of the water is merely local, and produced by local causes: so it is with the air of a district, a continent, or of the globe itself, many and distant portions of which are, or may be, at the same time, poisoned or vitiated; and such portions necessarily impair the health or destroy the lives of those who dwell within their influence. But the adjacent air must be pure, since the inhabitants are healthy and vigorous.

Let us observe the effects produced on two or more fish, placed in equal quantities of pure and poisoned water; and two or more birds, mice, or other animals, when put into vessels containing pure air and vitiated air, and the experiment may serve to illustrate this subject.

Were the air of a country generally vitiated, it is clear, that if not all, at least the mass of its population, must suffer in a greater or less degree.

A few years ago fever prevailed throughout most parts of this kingdom, but the local causes by which it was produced existed as generally as the fever itself; still, however, a great majority of the population escaped, even thousands, who from debility and disease were highly susceptible of infection; now this could not have happened had the atmosphere generally been vitiated.

It appears then, that as the waters of a river or the ocean are, or may be, partially and widely vitiated; and that as such waters enfeeble or kill the fish by which they are inhabited, so the air of a dwelling, a street, or a district, when vitiated, impairs the health, or destroys the lives, of the inhabitants in such house, street, or district; but, in both cases, the contamination of the air and water is local only, and produced by local causes.

In different quarters of the globe we have abundant proofs of the influence of local causes in the production of fevers and other disorders. In the fens of England and Holland agues and liver-complaints present themselves at certain seasons, but prevail only among the inhabitants of those marshes, or among those who dwell in their immediate vicinity. Within the tropics we find fluxes, fevers, and liver complaints, in a violent degree. The Yellow Fever rages in New York and Philadelphia; in Constantinople and Smyrna the Plague. But these distempers are local, and produced by local causes, viz. want of cleanliness and ventilation, the effluvia produced by the action of the sun's rays on stagnant water, and on dead animal and vegetable matters; and those most exposed to the effluvia are the first victims: as the poison becomes concentrated, the air to a greater distance is vitiated, and fever spreads; still, however, there are limits to its extension and influence: but that the atmosphere generally is not infected we have satisfactory proof; because, during the continuance of the Epidemic in New York, Constantinople, &c. not only considerable districts in their immediate neighbourhood, but several parts of the cities themselves were exempt from fever: even in the midst of the Plague, the isolated inhabitants of a clean, well-ventilated dwelling may remain in safety.

I have now endeavoured to show that fever is not infectious; that it is caused by a vitiated state of the air, and that this vitiation is local, and produced by local causes. To this vitiated state of the air, and not to fever itself, I apply the epithets contagious or infectious, using these terms indiscriminately: for, when contagion exists in the air, it infects those who come within the sphere of its action; and surely whatever communicates infection to bodies previously in health, may, with strict propriety, be denominated *infectious;* and that air in which contagion exists must be considered *contagious.*

THE EPITHETS EMPLOYED TO DISTINGUISH FEVER CONSIDERED.

It was my intention to offer a few remarks on the names by which fevers are usually distinguished, and the consequences of these distinctions; and on reviewing my original Work on Fever I find I cannot do this better than by copying some observations I have already published on this head.

"That fever is styled *Nervous*, in which the head and nerves are supposed to be chiefly engaged; but the nature of the affection is left unexplained. The only idea annexed to it seems to be that of debility, an idea productive of error, inasmuch as it leads to the use of wine, bark, cordials, and aromatics, which, according to the principles here laid down, must often prove fatal.

"Fever is denominated *Rheumatic*, when the joints are swelled, red, and painful, when the pulse is hard and frequent, the skin hot and dry, &c. Here the title is calculated to mislead, as it is founded on a fanciful theory respecting the nature of the disease; and hence the reason why a practice diametrically opposite is pursued by different practitioners.

"The *Bilious* and *Yellow* Fevers are so called, because the skin and tunica conjunctiva of the eye are of a yellowish or deep yellow hue. The terms are ambiguous, grounded on a solitary secondary symptom, which gives no idea of the seat or nature of the disorder, or of the treatment to be adopted.

"The *Putrid* has its name from the petechiæ, or the dark-coloured blotches or patches which sometimes appear upon the surface of the body. They are merely accidental, or secondary appearances, the consequence mostly of vascular excitement; the title putrid, therefore, is ill-founded, and as it points to a wrong mode of practice, has the effect of misleading the practitioner.

"The *Miliary* is so called from an eruption on the skin, which resembles the millet-seed. This eruption is a mere fortuitous circumstance, not indicative of a fever of a peculiar kind. It appears equally in the fevers called Nervous, Bilious, Rheumatic, Putrid, and Puerperal, especially when a heating regimen has been employed; it is sometimes accompanied by transient pains of the joints of the lower extremities. Something very mysterious and alarming is supposed to be connected with its appearance; yet as a symptom, taken singly, it will be found perhaps to be indicative of neither safety nor danger; for it is observed in the fevers just mentioned when no fatal sign is present, and also when death is fast approaching: the danger, therefore, is not to be estimated from its presence or absence, but from the symptoms which attend it, delirium, stupor, pain, laborious respiration, prostration of strength, difficult deglutition, symptoms which commonly prognosticate an unfavourable termination.

" The *Jail*, *Camp*, and *Hospital* Fevers, owe their names to the accidental circumstance of having been observed in persons collected together in hospitals, tents, or prisons,—terms without a signification as applied to disease.

" The *Puerperal* Fever is so styled, because it attacks lying-in women: no information can be thence obtained of the character or tendency of the disorder, or of the plan of treatment to be adopted. To this variety of fever the term *peritonæal* may properly be applied, because it is seated chiefly in the peritonæum and its duplicatures: like every other it is inflammatory, and, from the usual violence of its symptoms, demands the early employment of our most efficient remedies.

"Having now given some reasons for not adopting such epithets, I beg leave to state I have distinguished the varieties of fever by the terms Cephalic, Gastric, Hepatic, as the head, stomach, liver, &c. may be affected.*

" These terms are clear and precise; they express simply the seat of disease, and, unconnected with theory, they direct the practitioner to one useful practical object, the relief of the organ especially affected."†

In what light then are we to view the numerous varieties of fever, of which we have read and heard so much, and which, at the present day, are the cause of endless disputes and theories—are we to consider these but illusions, the productions of fancy and error? We must, I think, be led to form these conclusions, if we but open our eyes to the truth, and examine the subject in all its bearings.

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* Dr. Plouequet, Professor at Tubingen, considered, as early as the year 1800, that fever was a sympathetic affection, arising from inflammation of the brain, stomach, or bowels, and divided it into Cephalic, Gastric, and Splanchnic Typhus, with their varieties.

† See my Essay " On the Utility of Blood-letting in Fever."

THE END.